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A
NEW COLLECTION
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FOR THE PREPARATION AND EXECUTION

OF

CURIOUS ARTS,

AND

Interesting Experiments,

MEDICAL AND MISCELLANEOUS, DOMES-
TIC AND AGRICULTURAL ;

Which are well explained, and warranted genuine, and may
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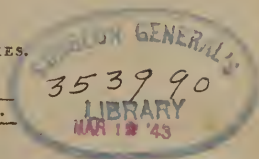
OF

DYEING,

IN ALL ITS VARIETIES.

Stereotype edition.

BOSTON :
PUBLISHED BY CHARLES GAYLORD.
1831.



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GENUINE

INVALUABLE RECEIPTS.



To Burnish with Gold.

Make a sizing by boiling the skins of beaver and musk-rats, (which may be easily procured at a hat manufactory,) in water, till it is of sufficient strength, that, by cooling, it will become a jelly, and will support a common leaden bullet on its surface. Strain the liquor, and give your work one coat of it, while warm, with a brush; when this is dry, add a little fine whiting to the sizing, and give the work one coat of this; then add as much whiting as will work freely under the brush, and lay on five or six coats of this, allowing it to dry each time. Smooth the work by wetting and rubbing it with pumice stone, and afterwards with sand paper. Take some burnish gold-size (which is composed of pipe clay, black lead and castile soap, but may be procured ready made,) and dilute it with water and the above mentioned sizing, equal quantities, and give the work three successive coats of this; when the last is dry, dip a camel hair pencil in some rum and water, and with it wet a small part of the work, and immediately, while it is flowing, lay on a leaf of gold, brushing it down with a very soft camel hair brush; proceed thus till the whole is gilt, and let it dry. Then with a flint burnisher, rub over the whole, carefully, till you bring it to a perfect polish, and the work is finished.

To Enamel Picture Glasses.

The glass must be washed perfectly clean and dried; then damp it by breathing on it, or wet it with the tongue, and immediately lay on a leaf of gold, and brush it down very smooth. When this is dry, draw any letters or flowers on the gold with Brunswick blacking, and when dry, the superfluous gold may be brushed off with cotton, leaving the figure entire. Afterward the whole may be covered with blacking, or painted in any colour, while the gold figures will appear to advantage on the opposite side of the glass

To Wash Iron or Steel with Gold.

Mix together one part of nitric acid, and two parts of muriatic acid, in a phial, and add gold leaf as much as the acid will dissolve. (This solution is called the nitro-muriate of gold.) Pour over this solution cautiously, about half as much sulphuric ether; shake the mixture, and then allow it to settle. The ether will take the gold from the acid, and will separate itself from it also, and form an upper stratum in the phial. Carefully pour off this auriferous ether, into another phial. Any piece of polished steel, or iron, may be washed over with this ether, and immediately plunged into cold water, and it will have acquired a coat of pure gold, the beauty of which may be increased by burnishing.—In some cases it may be well to heat the iron moderately in a fire, previous to burnishing.

To Wash Brass or Copper with Silver.

To half an ounce of nitric acid, in a phial, add

one ounce of water and two drachms of good silver. It will soon be dissolved, and if the acid and metal are both pure, the solution, (which is called nitrate of silver,) will be colourless. Add to the solution rather more tartrate of potass than will dissolve. Then dip a piece of soft leather in the solution, and rub it on the metal till it is dry; the metal may thus be handsomely silvered.—Another method is, to put some pieces of copper into the solution of silver, which will throw down the silver in a state of metallic powder. Fifteen or twenty grains of this powder, are mixed with two drachms of tartrate of potass, two drachms of muriate of soda, and half a drachm of alum. The metal is first washed with nitric acid, and immediately plunged into clear water, and is then rubbed over with this composition till it is thoroughly silvered.

Ornamental Bronze Gilding.

The ground on which bronze ornaments are to be formed, must be varnished with a mixture of copal varnish and old linseed oil. When this is dry, it will adhere slightly to any dry substance that is pressed against it. Whatever figures you intend to bronze, must be represented by holes cut through pieces of paper. Lay these patterns on the work, but not press them down any more than is requisite to keep the paper in its place. Then take a piece of soft deer skin leather, and dip it in some dry bronze (gold in powder) and apply it to the figures, beginning at the edges; tap the figure gently with the leather, and the bronze will stick to the varnish according to the shape of the pattern. Thus any figure may be produced, in a va-

riety of shades, by applying the bronze more freely to some parts of the work, than to others. If some internal parts of the figures, require to be more distinct than others, they may be wrought with different patterns, or may be edged with dark paint. The work must afterwards have one or more coats of copal or shellac varnish.

To give Wood a Gold, Silver, or Copper Lustre.

Grind about two ounces of white beach sand, very fine in a gill of water, in which half an ounce of gum arabic has been dissolved, and brush over the work with it. When this is dry, the work may be rubbed over with a piece of gold, silver or copper, and will, in a measure, assume their respective colours and brilliancy.

To Print Gold Letters on Morocco.

First wet the morocco with the whites of eggs; when this is dry, rub the work over with a little olive oil, and lay on gold leaves. Then take some common printing types, and heat them to the temperature of boiling water, and impress whatever letters you choose, on the gold. Rub the whole with a piece of flannel, and the superfluous gold will come off, leaving the letters entire.

To Dye Silk a Brilliant Gold Colour.

To one gill of water in a common flask, add one ounce of clean iron filings, or granulated zinc, and half an ounce of sulphuric acid. Hydrogen gas will be evolved from the water, and rise through the neck of the flask, which must not be stopped. Take a piece of white silk and immerse

it in some nitro muriate of gold, which has been diluted with three parts of water, to one of acid; and immediately, while the silk is wet, expose it to the current of gas, as it rises from the flask; the gold will immediately be revived, and the silk will become beautifully and permanently gilt

To Dye Silk a Brilliant Silver Colour.

Proceed as in the last experiment; only use the nitrate of silver, instead of the nitro-muriate of gold. Any letters or flowers may be drawn on the silk, with a camel hair pencil, dipped in the solution, and on being exposed to the action of the gas, will be revived and shine with metallic brilliancy.

Note.—If a jar or box be filled with hydrogen gas, and the silk be suspended in it, the action of the gas, and consequently the revivification of the metal will be more uniform.

Water proof Gilding and Silvering.

Grind one ounce of white lead, and two ounces of litharge, very fine in a gill of old linseed oil; expose this to the sun for a week in an open vessel; then add as much spirits of turpentine as will make it work freely with a brush, or camel hair pencil. Whatever letters, or flowers you wish to gild, must be first drawn with this sizing, and when dry, lay on gold or silver leaves smoothly over the whole, pressing them down with soft cotton; then brush over the whole lightly with cotton or a soft brush, and the superfluous leaf will be brushed off, leaving the figures entirely gilt by the leaf adhering to the sizing. *Note.*—The leaves of gold or silver may be spread on a piece of soft leather and cut

into pieces by drawing a smooth edged knife over them;—and the pieces may be conveyed to their places on the work, by means of a small block or knife, covered with soft woolen cloth, which being pressed gently on the pieces, takes them from the leather; and again being pressed on the sizing, leaves them there.

For a Malignant Sore Throat.

[By Dr. Jacob Ogden, Jamaica, *Long Isl.*

Take Seneka rattlesnake root, Virginia snake root, two ounces, calomus aromaticus, the roots of wild valerian, tops of rue, the flowers of English camomile each one ounce, cinnamon, myrrh, Regin of Guaiac. Brittain Saffron, Balsam Capev. prepared Crab's eyes, and Arminian bole, each half an ounce. Ginger and Opium each two drachms Maderia wine, enough to dissolve the opium, and of clarified honey, thrice the weight of all the powders.

To a child of one year old 15 grains of the Treacle and 2 or 3 grains of Calom. To 8 years old, 1-2 drachm and 4 or 5 grains of calom. To a grown person, near 2 drachms and 6 or 8 grains of calom.—repeat every 12, 16, 20 or 24 hours. Drink strong sage tea, acidulated with vinegar—keep the patient warm by avoiding the cold air—a little mercury may be given in the intervals, if the urgency of the symptoms require it.

Another Cure for the Throat Distemper

Purge with calomel, then take Borax, bole Armenic, and Sang. Draconis of each an equal quantity; when finely powdered, to a quarter of an

ounce of that mixture, add 3 gills of vinegar and 4 ounces of honey, which shake well together for a Gargle, and use it warm every two hours.

Polipus in the Nose.

Take blood root powdered fine, and used as snuff, will cure.

For the Ulcers.

Take 4 ounces honey, tinct. of myrrh and vinegar, of each an ounce, loaf sugar, two ounces, Borax and balsam sulphur, of each half an ounce—mix this to a balsam with the yolk of an egg, with a rag tied to a skewer to cleanse and anoint the ulcers after every gargling.

Whooping Cough.

Take a wine glass of rum, and a little spirits of turpentine, shake well together, rub the child by the fire gently down the neck and chin, night and morning; in a few days the cough will be cured.

Another.

Take dried Colts foot, a good handful, cut it fine and boil it in a pint of spring water, to half a pint, when almost cold, strain it and squeezing the herb as dry as you can. Dissolve in it half an ounce of sugar candy finely powdered, add one spoonful and a half of tincture of Liquorice. Give a child one spoonful 3 or 4 times a day and more to a grown person. It will cure in three or four days.

A Mouth-wash for the Canker.

Take sage, rose leaves, blue violets, a little alum and honey.

Abel Puffer's Cure for the Bite of a Rattle Snake.

As soon as may be after the person is bit, cut a gash in the place bitten, as deep as the teeth went, and fill it with fine salt—take common plaintain, or strong brine, bruise it, add a little water, squeeze out the juice and mix it with clear water, make a brine with salt and the juice, till it will not dissolve the salt; then apply a linen bandage, above the swelling, but not too tight, keep it wet with the brine for it will dry very fast—stroke the part with the hand towards the cut, as hard as can be borne, and you will soon see the poison and virulent matter flow out of the cut; and if it flows so fast as to swell below the cut, you must cut below, to give vent to the matter, and it will not leave running till all is discharged. Move the bandage downwards as the swelling abates. Give the patient sweet oil, saffron or snake root to defend the stomach. It often bleeds after the poison is out, which is a good sign, care must be taken, that none of the virulent matter get to any raw flesh. Mr. Puffer has cured two persons dangerously bit, and a horse and dog.

Nerve ointment.

Take neats foot oil, oil terebinth, brandy and oil of John's wort, beef gall and simmer together.

Cancers.

Repeated application of leaches to cancers have been attended with great success. A man with a cancer on the lip, which had been cut without effect, had leaches applied; the three first, after sucking, fell off dead, in a few days after three more shared the same fate. In a week after three more

were applied, which dropped off alive. This wrought a perfect cure.

Another.

Apply a poultice of Carrots, warm, fill all the holes and hollows of the ulcer, covered with a warm cloth, renew it twice a day—wash it with a decoction of hemlock. Also, warm milk and water is good; drink 2 or 3 pints of the infusion of malt daily. Three pints of boiling water poured on half a pint of malt is generally sufficient.

Another.

The tail of a Lizzard boiled, produces a gravy or broth, which being drank a few times, cures radically, the most inveterate cancer.

Another.

An Empl. of Cicuta applied to a cancer after rubbing with a solution of Sub. Corros. scarifying the tumor, a little, will infallibly cure them. The solution is made by dissolving 1 dr. in 1 oz. of water, give a gill of Cicuta morning and evening.

Dropsy.

Six quarts old hard cider, 1 pint mustard seed pounded, 1 double handful parsley roots, do. lignum vitæ shavings, 1 do. horse radish roots, simmer over a slow fire 48 hours, take a teacupful three times a day. It operates powerfully by urine.

Another.

Put a large cup full of bohea tea into a tea pot, steep it, drink the liquor by degrees, and eat all

the tea leaves or grounds, in the course of the forenoon. Do the like in the afternoon, and so proceed on for 3 or 4 days. The water will be discharged by natural evacuations.

Another.

A strong decoction of the leaves or ripe berries of dwarf elder has cured a man of an inveterate dropsy in about a week. Sweeten it with molasses.

Bone Ointment.

Take wormwood, camomile, St. John's wort, henbane, night shade, plaintain, green tobacco, melilot, simmer in hog's lard and fresh butter, then strain off, for use.

Another

Take mullin, camomile, catmint, tansey, burdock mayweed, penny royal, mint, asmart, yarrow, wormwood indigo weed, simmer gently together in fresh butter, till they are crisp and strain out for use.

Quinsy.

Mix oil Amygdal. Dulcis with spts. sal ammon dip in a piece of baize and apply to the part affected.

Liquid Laudanum.

Take proof spirit one pound, opium two ounces, Croc. Ang. one ounce, infuse and strain.

I feel, O laudanum, thy power divine,
I fall, with pleasure, at thy slumbering shrine,
Lull'd by thy charms, I'scape each anxious
thought,
And every thing but *Mira* is forgot.

Flores Antimonii, are highly extolled for scorbutic eruptions, hypocondriac affections, paralytic disorders, in a Mania it is considered as a specific, confirmed Lues, Rheumatism.

Volatile Linament for the Sciatica.

Take Tem. Feenic. Cimin. a. a. 1-2 oz.

Sal. C. C. Volat. 4 scrup.

Camoli. 3 scrup.

Sapo Castiel, 2 oz.

Ungt. Dialth. 4 oz.

Rub the articles very fine, add the Ungt. and lastly the Sal. C. C. Spread on thin leather, and apply, fresh made, to the hip.

Janudice.

Take the white of an Egg and two glasses of spring water, beat well together, and drink it every morning, it cools the lungs, promotes perspiration, invigorates the animal spirits, causes digestion, and creates an appetite.

Rickets.

Buckshorn roots that grows in meadows two ounces, New-England Gentian two ounces, Rhubarb 50 grains, Stoned Raisins one pound, put them into a quart of good wine, steep them 24 hours and give two spoonfulls morning and evening.

To Silver Looking Glasses.

Take some fine plaster of paris, and mix it with water to the consistence of soft putty; spread this out thin on a board; lay the glass on this and press it down till it lays quite close and make an impression in the plaster; let it remain till the plas-

ter is dry. Then take up the glass and spread some tin foil over the impression, and press it with the glass into the plaster mould, to make it lie close. Then pour on a little mercury, and spread it all over the tin foil; place the glass in the mould again, and place a weight on it, as heavy as may be without endangering the glass, and leave it two or three days. Then pour off the superfluous mercury, and raise the glass from the mould cautiously, and the amalgum of tin and mercury, which is formed by the process, will adhere to the glass, which will thus be perfectly silvered.

To write on Paper with Gold or Silver.

Take some nitro-muriate of gold, or nitrate of silver and expose it to a gentle heat in an open vessel, by which means, the acid will be evaporated, and the metal will form itself in crystals on the sides, or at the bottom of the vessel. These crystals may be carefully collected, and dissolved in water. With this solution, (which is an aqueous solution of nitro-muriate of gold, or nitrate of silver) any writing may be performed on paper, with a common pen, and by being exposed while damp, to the action of hydrogen gas, the writing will be revived in metallic lustre.

To make Good Shining Black Ink.

Take two ounces of nut-galls in coarse powder; one ounce of wood in thin chips; one ounce of sulphate of iron; three fourths of an ounce of gum arabic; one fourth of an ounce of sulphate of copper; and one fourth of an ounce of loaf sugar. Boil the galls and logwood together in three pints of water, till the quantity is reduced to one half.

Then the liquor must be strained through a flannel into a proper vessel, and the remainder of the ingredients be added to it. The mixture is then to be frequently stirred till the whole is dissolved; after which it must be left at rest for twenty-four hours. The ink may then be decanted from the gross sediment, and must be preserved in a glass bottle well corked.

Blue Ink.

Dissolve one ounce of gum arabic in a pint of water. In a part of this gum water, grind a small quantity of best prussian blue; you may thus bring it to any depth of colour you choose.

Red Ink.

In the above mentioned gum water, grind very fine three parts of vermilion with one of lake or carmine. This is a very perfect colour, but may require to be shaken up occasionally.

Yellow Ink.

Steep one ounce of turmeric, in powder, in a gill of good rum or gin which is not coloured; let it rest twenty-four hours; then throw it on a cloth, and express the colored liquor, which mix with gum water.

Green Ink.

To the tincture of turmeric, add a little prussian blue.

Purple Ink.

Grind, or dissolve some lake in water; otherwise express the juice from the deepest coloured

beets; to either of these, add a little blue and gum water.

To write in various Colours, with the same Pen, Ink and Paper.

Take a sheet of white paper, and wet some parts of it with a solution of sub-carbonate of potass; wet some other parts of it with the same but more diluted; some other parts with diluted muriatic acid; and other parts with a solution of sulphate of iron; dry the paper and it will be white as ever. Then take the juice of blue violets, or tincture of red cabbage, (water that has been poured while hot, upon red cabbage in thin slices,) and with it write on the paper. The ink is of itself, a faint purple; where the paper was wet with acid, it will instantly become red; on the diluted alkali, it will become green; on the stronger alkaline solution, it will take a yellow; and on the sulphate of iron, it will become deep purple or brown. Thus you will have several colours in the same line of writing.

Invisible Ink for Secret Correspondence.

Dissolve muriate of ammonia in water, and write;—the writing will be invisible. When you would make the writing appear, heat the paper by the fire and the letters will become black.

Sympathetic Inks.

Process I.—Write with a solution of sulphate of iron,—the writing will be invisible. Dip a feather in an infusion of nutgalls (water in which pulverised nutgalls have been steeped,) and the writing will become black.

Process 2.—Write with a dilute infusion of galls,—it will be invisible. Dip a feather in a solution of sulphate of iron, and moisten the paper with it and the writing will become black.

Process 1.—Write with a solution of sub-carbonate of potass; wet this writing with a solution of sulphate of iron,—it will take a deep yellow colour.

Process 4.—Write with a solution of sulphate of copper,—no writing will be visible. Wash the paper with a solution of prussiate of potass,—the writing will then get a reddish brown colour.

Process 5.—Write with diluted nitrate of silver, and let the writing dry in the dark—it will be invisible; but expose the paper to the rays of the sun, and the writing will become black.

Luminous Ink that will shine in the Dark.

To half an ounce of sulphuric ether, in a phial, add one drachm of phosphorus; cork the phial close and let it remain two or three weeks, often shaking it. Afterwards any words may be written with it on dark coloured paper, and if carried into a dark room, will appear very bright.

To make a Writing appear and disappear at pleasure.

Dissolve equal parts of sulphate of copper and muriate of ammonia in water, and write. When you would make the writing appear, warm the paper gently by the fire; the writing will appear in a yellow colour; but as soon as you take the paper

into the cold air, the writing will vanish. This may be often repeated.

To make a Writing vanish and another appear in its place.

Write on paper with a solution of sub-carbonate of potass,—the writing will be invisible. Mix together equal parts of solution of sulphate of iron, and infusion of galls; write with this mixture (which is black) on the same paper. Then add to the black liquor a little sulphuric acid, sufficient to deprive it of colour. Wet the paper with this compound; the acid will discharge the colour from the last writing, while the alkali of the first, will precipitate the gallate of iron, and the writing will become black.

To restore old Writing that is nearly defaced

Boil one ounce of powdered nut-galls, for an hour or more in a pint of white wine; filter the liquor, and when cold, wet the paper with it, or pass it on the lines with a camel-hair pencil, and the writing will be much revived.

To paint a Picture that will appear and disappear occasionally.

To half an ounce of nitric acid, add one drachm of cobalt, one drachm of muriate of soda, and two ounces of water; set it in a sand bath, or on warm ashes, where it must remain five or six hours. Then filter the solution, (which is nitro-muriate of cobalt,) and with it draw the trees, and shrubbery of a designed picture. Then with a solution of oxide of cobalt in acetic acid, draw some distant mountains, fences, &c. and with muriate of copper

draw some flowers, buildings, &c. These will all be invisible when dry; but warm the paper and the picture will appear in green, blue and yellow. It will disappear when the paper becomes cold.

To give Iron the Whiteness of Silver.

To nitric acid, diluted with an equal quantity of water, add as much mercury as the acid will dissolve; then add to the solution, three or four times as much water, and having given the iron a coat of copper, by immersing it in a solution of sulphate of copper, brush it over with the diluted nitrate of mercury; its appearance will be equal, if not superior to that of real silver. In this manner any common, or rough iron work, may be apparently silvered at a most insignificant expense.

To cure the Jaundice.

Take the white of an egg and two glasses of spring water, beat well together, and drink it every morning, it cools the lungs, promotes perspiration, invigorates the animal spirits, causes digestion, and creates an appetite.

The Stone.

Take Alicant Soap 8 parts, Oyster Shell Lime 1 part, beat into a mass with water, then dissolve the mass into an Emulsion, by adding more water so as to make 6 quarts of the emulsion, from every pound of soap avoirdupois; let it stand a month, stir it frequently and give half a pint three times a day.

Stone or Gravel.

Take a large handful of the fibres or roots of

garden Leeks, put them into two quarts of soft water; simmer gently over the fire close stopped, to the consumption of one half; pour off and drink a pint in the day, morning, noon, and night. This is for an adult—it is some weeks before relief appears; perseverance gains the point.

Corns.

It is said, if you bind a lock of unwrought cotton on a Corn for a week or two, you will find in an unaccountable manner, the corn will be dislodged.

Tooth-Ache.

Burn a sheet of clean white writing paper on a clean white plate, take up the oil with clean cotton, and apply it in or on the tooth 12 or 15 minutes.

Putrid sore Throat.

Take a handful of hops, steep in spirits and apply a common funnel to the liquid, let the patient apply the funnel to his throat, and thereby absorb the steam. Let the hops be applied like a poultice to the throat, and occasionally repeated.

Salve for cuts, &c.

Take 1-2 pint sweet oil, 5 ounces red lead finely sifted, boil the same together, till they turn black, add rozin 2 ounces; by small quantities at a time to prevent its boiling over; add a tea spoonfull Venice turpentine, pour it all into a vessel of cold water; oil a board to work it on, roll it till it becomes smooth and hard, lay on a board to dry in rolls.

Worms.

Boil 4 ounces quick silver in one quart soft wa-

ter an hour, in a glazed pipkin, pour it off, bottle it for use. Boil the quicksilver as often as needful. Children may drink a gill, suited to their taste. Adults may drink it indifferently as water. Then purge off the dead worms.

To clean Teeth.

Rub the teeth two or three times a day with a very fine powder of red Coral, washing them well with water in which Sal Prunel. is dissolved

Corns—a plaister.

Spread a plaister of Gum Ammon. and apply it to the corn, till it has sufficiently done the designed work of emolition.

Gout. *As*

Apply a Leek poultice to the part affected; numerous instances of its efficacy in this painful disorder, have recently occurred; its culture should be cherished as a medicine of inestimable value.

Weak and weeping Eyes.

Make a strong decoction of camomile, boiled in sweet cow's milk; bathe the eyes several times a day, as warm as can be borne. It must be continued several weeks.

Rheumatism.

Put 1 ounce of gum camphor into a quart of spirits, and as much of the bark of sassafras roots as the spirits will cover, steep 12 hours at least—take half a wine glass full at bed time, in the morning, and before noon. Rub the parts affected with

it—the dose may be increased if necessary—it produces perspiration—avoid taking cold.

Jumble Beer.

Take two spoonfulls of ground ginger, and one pint of molasses, to 2 1-2 pails of water; first mix the ingredients with a little water warmed, especially in cold weather; then add the whole complement of water and shake it very briskly, and in about six or eight hours it will be sufficiently fermented.

Wine from Cider.

Add to a barrell of cider from the press, honey sufficient to bear up an egg; work all of the filth out of the bung hole, by keeping the barrell full; in about five weeks, draw off the pure liquor into a tub, and put the whites of eight eggs, well beaten up with a pint of clean sand into a tub; then add one gallon of cider spirits, and mix the whole together; and having cleansed the barrell, return the liquor into it, bung it tight, and when fine, rack it off into kegs for use. It does not cost 25 cents per gallon.

Waterproof Leather

Take Linseed Oil one lb. Beeswax six ounces, mutton suet eight ounces, melt the whole together slowly, rub the composition well upon boots and shoes; soles as well as upper leather.

Tanning Leather.

An eminent tanner in Poland, has ascertained that the leaves of the oak are equal to the bark, in tanning leather; provided they are used in the

month of September, when they possess a bitter sap, which they afterwards lose.

Star in a Horse's forehead.

Take pickled mackerel and confine it on in any shape you please, three or four days repeating, and it will produce a white spot.

Rub the white saddle spots, on a horse's back, a few times daily in the spring of the year, before the coat is shed, with bacon grease, and it will restore the natural colour.

Improvement in Bread.

Take flour 5 lbs. Rice 1 lb. boil the rice very soft, if too thick, add a little warm water, then add your yeast. This makes 8 lbs. of bread.

Preservation of fresh meat.

Put fresh meat in a close vessel containing vinegar, which will preserve it a considerable time. Tainted meat may be rendered good by pickling it in potash water for some time; before it is cooked however, it should be dipped in vinegar a short time, and then salted in brine.

Mending China.

Pound flint glass very fine, then grind it on a painter's stone with the white of an egg; it will not break in the same place.

Writing Ink.

Take four ounces of Nutgalls, Coperas and Gum Arabic, each two ounces, one quart of rain water; mix and shake up well, and often. If it is set in the sun, it will be the sooner fit for use.

Red hair made black.

Take black lead and ebony shavings each 1 ounce, of clear water 1 pint; boil together 1 hour, and when fine, bottle it for use. The comb must be often wet, and the hair frequently combed; and if a fine black is required, add two ounces of camphor.

A Cordial.

Take seven lemons, one quart of rum or brandy, six ounces good loaf sugar, one gill of new milk; simmer the sugar in half a pint of spring water, and skim it; let the milk be made as warm as it comes from the cow, put the very thin parings of the rinde of the lemons with the milk and syrup, into a jug with the rum, close stopped; shake well for three days, then filter through paper, and bottle it.

Shoe Blacking.

Take 1 quart of good vinegar, four ounces Ivory Black, one table spoonful of sweet oil, one gill of molasses, 1-2 an ounce oil vitriol; the vitriol to be put in last, and well stirred together.

Bolts in a Horse.

Bleed in the mouth; in about an hour or two after the blood is stopped, pour down two ounces of alum dissolved in a quart of cider, warmed.

Iron Moulds.

Take strong spirits of salts, and dipping the finger in it, daub the stain with acid, letting it rest until it is removed. If the spot has been frequently washed, it will be hard to move; in this case put on a little salt of sorrel and then rub it well with a

slice of lemon. Then wash it in hot soap and water, and rinse it, and again with salt of sorrel and lemon; or, add to it the tincture of galls, till it turns black; let it dry, then apply salt of sorrel and lemon: sometimes one and sometimes the other answers.

Liquid Blacking.

Take three ounces gum shellack, 1 1/2 ounce Venice turpentine, one pint spirits wine, four table spoonfuls of ivory black; put the gum lack in the spirits wine, stop it, put it into hot water, or in the sun, until dissolved, then add the turpentine and ivory black; when well mixed and shook up, apply it with a sponge or small brush.

To destroy Flies.

Take half a tea spoonful of black pepper made fine, a tea spoonful of brown sugar, a table spoonful of cream; lay in a plate and set it for them.

Bed Bugs.

Dissolve one ounce of succotrine aloes in a gill of spirits, this will clear several bedsteads, with a trifling cost—mark the breadth of a finger with the solution, round the foot of each bedpost.

Raisin Wine.

Put 20 pounds of raisins, with the stalks into a hogshead, and fill it almost full of spring water; let it steep about twelve days, frequently stirring it about, and after pouring the juice off press the raisins, put all the liquor together in a clean vessel. You will find it to hiss for some time, and when the noise ceases, stop it close and let it stand

for six or seven months; and then, if it proves fine and clear, rack it off into another vessel; stir it up and let it remain twelve or fourteen weeks longer; then bottle it off.

Ink spots on Cotton.

Apply strong vinegar, lemon juice and salt; by rubbing the spot with part of a lemon or common muriatic acid diluted. Washing the spot well in cold water after the stain is removed.

To remove Printing Ink.

Apply warm oil of turpentine, by rubbing the spot it will extract ink or paint. Warm the turpentine by putting the vial in warm water.

Stain of fruit or wine.

Apply strong spirits of wine; if that does not succeed, apply oxy muriatic acid, and washing with soap alternately. Apply this, in a small tea or coffee cup, put three or four tea spoonfuls of common spirits of salt, to this add about half a spoonful of red lead, after having immersed the small cup in a larger one containing hot water; moisten the stain and stretch it over the vapor, till the stain be effaced—wash it well in water.

To remove grease spots.

Apply white tobacco pipe clay, or French chalk (that is Steatite or soap stone) put blotting paper over it and apply a hot iron at a little distance. This will take out much of the grease by repetition. Good ether or hot oil of turpentine will efface the remainder. Where you can venture to wash the place, a good washing with hot soap and water, will

answer every purpose. You may thus efface grease spots from paper, should any slight stain remain at the edges, brush it with a camel's hair pencil, dipped in very strong spirits of wine or ether

Eye Stone.

It is asserted, that a grain of flax seed possesses all the valuable properties of an eye stone.

Dye—Yellow and Green.

Cut the tops of potatoes when in the flower, bruise and press it, to obtain the juice. Linen or woollen kept in this 48 hours takes a fine yellow. Plunged afterwards in a blue dye it acquires a permanent green color.

Ginger Beer.

Take forty quarts of water, thirteen pounds sugar, twelve good lemons, or a proportionable quantity of lime juice, eight ounces of bruised ginger, and the whites of six eggs, well beaten; mix all together, skimming it before it begins to boil, and boil it for twenty minutes; add an ounce of isinglass, and a spoonful of balm, after it is put into the cask, stir it well; it will be ready for bottling in ten days.

Potatoes.

Plough a deep furrow, place a quantity of cut straw or old hay in the furrow, and lay the seed potatoes on it and cover as usual. The potatoes will be of better quality. It has been proved, that one large potatoe put into a hill is preferable and more productive than cutting them in the usual way.—Pick off the blows and balls.

To clarify Beer.

Put in a piece of soft chalk, as big as two hen's eggs to a barrell, which will disturb the liquor and cause it to fine, and will draw brisk, though it was flat before.

Shoe Blacking.

Take 4 ounces ivory black, and half pint of vinegar, mix and apply with a brush in the usual way.

Bees preserved.

About the first of May, raise the hives a little, and strew some fine salt under the edge, which will drive the worms away.

Corn Stalks.

Do not be in haste to cut your stalks, until they loose their deep green color, begin to turn yellow and become dry at the top end; the sap of the upper stock is absorbed and is necessary to the growth of the ear; by cutting too early you will loose more in grain than is gained in fodder. When corn is frost bitten, cut it up by the roots, tie it in small bundles and stook it.

Spring Rye.

Sow a peck of oats, with a bushel of spring rye to prevent blasting, it is easily separated from the rye by a good winnowing mill. This has been proved.

Fall Ploughing.

By ploughing land in the fall, intended to be planted the next season, the weeds are turned in and grub worms and eggs are destroyed.

To bleach Cotton.

The first operation consists in scouring it in a slight alkaline solution; or what is better, by exposure to steam. It is afterwards put into a basket, and rinsed in running water. The immersion of cotton in an alkaline ley, however it may be rinsed, always leaves with it an earthy deposit. It is well known that cotton bears the action of acids better than hemp or flax; that time is even necessary before the action of them can be prejudicial to it; and by taking advantage of this valuable property in regard to bleaching, means have been found to free it from the earthy deposit, by pressing down the cotton in a very weak solution of sulphuric acid, and afterwards removing the acid by washing, lest too long remaining in it should destroy the cotton.

To bleach Wool.

The first kind of bleaching to which wool is subjected, is to free it from grease. This operation is called scouring. In manufactories, it is generally performed by an ammoniacal ley, formed of five measures of river water and one of stale urine; the wool is immersed for about twenty minutes in a bath of this mixture, heated to fifty six degrees: it is then taken out, suffered to drain, and then rinsed in running water: this manipulation softens the wool, and gives it the first degree of whiteness; it is then repeated a second, and even a third time, after which the wool is fit to be employed. In some places scouring is performed with water slightly impregnated with sop; and, indeed, for valuable articles, this process is preferable, but it is too expensive for articles of less value.

Sulphuric acid gas unites very easily with water,

and in this combination it may be employed for bleaching wool and silk.

To bleach silk.

Take a solution of caustic soda, so weak as to make only a fourth of a degree, at most, of the areometer for salts, and fill with it the boiler of the apparatus for bleaching with steam. Charge the frames with skeins of raw silk, and place them in the apparatus until it is full; then close the door and make the solution boil. Having continued the ebullition for twelve hours, slacken the fire, and open the door of the apparatus. The heat of the steam, which is always above 250 degrees, will have been sufficient to free the silk from the gum, and to scour it. Wash the skeins in warm water; and having wrung them, place them again on the frames in the apparatus to undergo a second boiling. Then wash them several times in water, and immerse them in water somewhat soapy, to give them a little softness. Notwithstanding the whiteness which silk acquires by these different alterations, it must be carried to a higher degree of splendour by exposing it to the action of sulphuric acid gas, in a close chamber, or by immersing it in sulphurous acid, as before recommended for wool.

To clean silk stockings.

Wash with soap and water; and simmer them in the same for ten minutes, rinsing in cold water. For a blue cast, put one drop of liquid blue, into a pan of cold spring water, run the stockings through this a minute or two, and dry them. For a pink cast, put one or two drops of saturated pink dye into cold water, and rinse them through this. For

a flesh color, add a little rose pink in a thin soap liquor, rub them with clean flannel, and calender or mangle them.

To clean buff colored cloth.

Take tobacco pipe clay, and mix it with water as thick as lime-water used for whitewashing rooms; spread this over the cloth, and when it is dry, rub it off with a brush, and the cloth will look extremely well.

To wash fine lace or linen.

Take a gallon of furze blossoms and burn them to ashes, then boil them in six quarts of soft water; this, when fine, use in washing with the suds, as occasion requires, and the linen, &c. will not only be exceedingly white, but it is done with half the soap, and little trouble.

To clean white veils.

Put the veil in a solution of white soap, and let it simmer a quarter of an hour. Squeeze it in some water and soap till quite clean. Rinse it from soap, and then in clean cold water, in which is a drop of liquid blue. Then pour boiling water upon a teaspoonful of starch, run the veil through this, and clear it well, by clapping it. Afterwards pin it out, keeping the edges straight and even.

To clean black silks.

To bullock's gall add boiling water sufficient to make it warm, and with a clean sponge, rub the silk well on both sides, squeeze it well out, and proceed again in like manner. Rinse it in spring water, and change the water till perfectly clean. dry it in the air, and pin it out on a table; but first

dip the sponge in glue water, and rub it on the wrong side; then dry it before a fire.

To clean black veils.

Pass them through a warm liquor of bullock's gall and water; rinse in cold water: then take a small piece of glue, pour boiling water on it, and pass the veil through it; clap it, and frame it to dry

To clean scarlet cloth.

Dissolve the best white soap; and if black looking spots appear, rub dry soap on them; while the other soap is dissolving; with hot water, brush it off. If very dirty, immerse the article into the warm solution and rub the stained parts. Dispatch it quickly, and as soon as the colour begins to give wring it out, and immerse it in a pan or pail of warm water; wring it again, and immerse it in cold spring water, in which mix a table spoonfull of solution of tin. Stir it about, and in ten minutes hang it to dry in the shade, and cold press it.

To dip scarlet cloth.

After it has been thoroughly cleaned with soap, and rinsed with warm water, put into boiling spring water, a quarter of a pound of young fustic, or zant, a drachm of pounded and sifted cochineal, and an equal quantity of cream of tartar and cochineal; boil five or six minutes, and cool by adding a pint or two of cold spring water, and a table spoonful of the solution of tin. Stir the mixture, put in the cloth, boil for ten minutes, and when dry cold press it.

Dip a brush in warm gall, and apply it to greasy

places, rinse it off in cold water; dry by the fire, then lay the coat flat, strew damp sand over it, and with a brush beat the sand into the cloth; then brush it out with a hard brush, and the sand will bring away the dirt.—Rub a drop of oil of olives over a soft brush, to brighten the colours

To take stains out of silver plate.

Steep the plate in soap leys for the space of four hours, then cover it over with whiting wet with vinegar, so that it may stick thick upon it, and dry it by the fire; after which, rub off the whiting and pass it over with bran, and the spots will not only disappear, but the plate will look exceedingly bright.

To cleanse gloves without wetting.

Lay the gloves upon a clean board, make a mixture of dried fulling earth and powdered allum, and pass them over on each side with a common stiff brush; then sweep it off, and sprinkle them well with dry bran and whiting, and dust them well; this, if they be not exceedingly greasy, will render them quite clean; but if they are much soiled take out the grease with crumbs of toasted bread, and powder of burnt bone; then pass them over with a woollen cloth dipped in fulling earth or alum powder; and in this manner they can be cleaned without wetting, which frequently shrinks and spoils them.

To take out writing.

When recently written, ink may be completely removed by the oxymuriatic acid, (concentrated and in solution.) The paper is to be washed over

repeatedly with the acid; but it will be necessary afterward to wash it with lime water, for the purpose of neutralizing any acid that may be left on the paper, and which would considerably weaken it. If the ink has been long written, it will have undergone such a change as to prevent the preceding process acting. It ought therefore to be washed with liver of sulphur (sulphuret of ammonia) before the oxymuriatic acid is applied. It may be washed with a hair pencil.

To clean paper hangings.

Cut into eight half quarters a stale quartern loaf; with one of these pieces, after having blown off all the dust from the paper to be cleaned by means of a good pair of bellows, begin at the top of the room, holding the crust in the hand, and wiping lightly downward with the crumb, about half a yard at each stroke, till the upper part of the hangings is completely cleaned all round; then go again round with the like sweeping stroke downward, always commencing each successive course a little higher than the upper stroke had extended till the bottom be finished. This operation, if carefully performed, will frequently make very old paper look almost equal to new. Great caution must be used not by any means to rub the paper hard, nor to attempt cleaning it the cross or horizontal way. The dirty part of the bread too must be each time cut away, and the pieces renewed as soon as at all necessary.

To fry meals &c.

Be always careful to keep the frying pan clean, and see that it is properly tinned. When frying any

sort of fish, first dry them in a cloth, and then flour them. Put into the pan plenty of dripping, or hog's lard, and let it be boiling hot before putting in the fish. Butter is not so good for the purpose as it is apt to burn and to blacken, and make them soft. When they are fried, put them in a dish or hair sieve, to drain before they are sent to table. Olive oil is the best article for frying, but it is very expensive, and bad oil spoils every thing that is dressed with it. Steaks and chops should be put in when the liquor is hot, and done quickly, of a light brown and turned often. Sausages should be done gradually, which will prevent their bursting.

To pot leg of beef.

Boil a leg of beef till the meat will come off the bone easily; then mix it with a cow heel, previously cut into thin pieces, and season the whole with salt and spice; add a little of the liquor in which the leg of beef was boiled, put it into a cheese-vat or cullender or some other vessel that will let the liquor run off; place a very heavy weight over it, and it will be ready for use in a day or two. It may be kept in souse made of bran boiled in water, with the addition of a little vinegar.

To make a plain pudding.

Weigh three quarters of a pound of any odd scraps of bread, whether crust or crumb, cut them small, and pour on them a pint and a half of boiling water, to soak them well. Let it stand till the water is cool, then press it out, and mash the bread smooth with the back of a spoon. Add to it, a tea-spoonful of beaten ginger, some moist sugar,

and three quarters of a lb. of currants. Mix all well together, and lay it in a pan well buttered. Flatten it down with a spoon, and lay some pieces of butter on the top. Bake it in a moderate oven, and serve it hot. When cold, it will turn out of the pan, and eat like good plain cheese cakes.

A baked potato pudding.

1 Mix twelve ounces of potatoes boiled, skimmed, and mashed, 1 oz. of suet, quarter of a pint of milk, and 1 oz. of cheese grated fine; add as much boiling water as is necessary to produce a due consistence, and bake it in an earthen pan.

Tansy pudding.

Blanch and pound a quarter of a pound of Jordan almonds; put them into a stew pan, add a gill of the syrup of roses, the crumb of a French roll, some grated nutmeg, half a glass of brandy, two tablespoonfuls of tansy juice, 3 oz. of fresh butter, and some slices of citron. Pour over it a pint and a half of boiling cream or milk, sweeten, and when cold, mix it; add the juice of a lemon, and 8 eggs beaten. It may be either boiled or baked.

To make a Fast day's dish.

Boil eggs very hard, and cut a little from the thick ends. Fry them in a pan, and take care to keep them continually in motion; then place them in the dish, pour over them some good fish or herb gravy, and garnish with lemon.

To make a puff paste.

Take a quarter of a peck of flour, and rub it into a pound of butter very fine. Make it up into a

light paste with cold water just stiff enough to work it up. Then lay it out about as thick as a crown piece; put a layer of butter all over, then sprinkle on a little flour, double it up, and roll it out again. Double and roll it with layers of butter three times, and it will be fit for use.

To make a short crust.

Put six ounces of butter to eight ounces of flour, and work them well together; then mix it up with as little water as possible, so as to have it a stiffish paste; then roll it out thin for use.

To make paste for tarts.

Put an ounce of loaf sugar, beat and sifted, to one pound of fine flour. Make it into a stiff paste, with a gill of boiling cream, and three ounces of butter. Work it well, and roll it very thin.

To steam potatoes.

Put them clean washed, with their skins on, into a steam saucepan, and let the water under them be about half boiling, let them continue to boil rather quickly, until they are done; if the water once relaxes from its heat, the goodness of the potato is sure to be affected, and to become soddened, let the quality be ever so good. A too precipitate boiling is equally disadvantageous; as the higher parts of the surface of the root begin to crack and open, while the centre continues unheated and undecomposed.

Of roots.

Cut carrots and parsnips to the length of a finger, and of much the same thickness; boil them

till half done in water, put them into a stew pan with small bits of ham, chopped parsley, and shallots, pepper and salt, a glass of wine and broth; let them stew slowly until the broth is reduced pretty thick, and add the squeeze of a lemon when ready to serve. For maigre, instead of ham, use mushrooms, and make a mixture beat up with yolks of eggs and maigre broth. Celery is done much the same, only it is cut smaller. If these roots are to be served in a boat for sauce, boil them tender in the broth pot, or in water, cut them into the desired length, and serve with a good gravy or white sauce.

To make a rich plum cake.

Take one pound of fresh butter, one pound of sugar, one pound and a half of flour, two pounds of currants, a glass of brandy, one pound of sweetmeats, two ounces of sweet almonds, ten eggs, a quarter of an ounce of allspice, and a quarter of an ounce of cinnamon.

Melt the butter to cream, and put in the sugar, stir it till quite light, adding the allspice, and pounded cinnamon; in a quarter of an hour take the yolks of the eggs, and work them in, two or three at a time; and the whites of the same must by this time be beaten into a strong snow quite ready to work in; as the paste must not stand to chill the butter, or it will be heavy, work in the white gradually: then add the orange peel, lemon and citron, cut in fine stripes, and the currants, which must be mixed in well, with the sweet almonds. Then add the sifted flour and glass of brandy. Bake this cake in a tin hoop in a hot oven for three hours, and put twelve sheets of paper under it to keep it from burning.

To make a rich seed cake.

Take a pound and a quarter of flour well dried, a pound of butter, a pound of loaf sugar, beat and sifted, eight eggs and two ounces of caraway seed, one grated nutmeg, and its weight in cinnamon. Beat the butter into a cream, put in the sugar, beat the whites of the eggs and the yolks separately, then mix them with the butter and sugar. Beat in the flour, spices and seed, a little before sending it away. Bake it two hours in a quick oven.

A plain pound cake.

Beat one pound of butter in an earthen pan until it is like a fine thick cream, then beat in nine whole eggs till quite light. Put in a glass of brandy, a little lemon peel, shred fine, then work in a pound and a quarter of flour; put it into the hoop or pan and bake it for an hour. A good plum cake is made the same with putting one pound and a half of clean washed currants and half a pound of candied lemon peel.

Beat the yolks of fifteen eggs for nearly half an hour, with a whisk, mix well with them ten ounces of fine sifted loaf sugar, put in half a pound of ground rice, a little orange water or brandy, and the rinds of two lemons grated, then add the whites of seven eggs well beaten, and stir the whole together for a quarter of an hour. Put them into a hoop and set them in a quick oven for half an hour when they will be properly done.

To make plain gingerbread.

Mix three pounds of flour with four ounces of moist sugar, half an ounce of powdered ginger, and

one pound and a quarter of warm treacle; melt half a pound of fresh butter in it; put it to the flour and make it a paste; then form it into nuts or cakes, or bake it in one cake.

To make cream cakes.

Beat the whites of nine eggs to a stiff froth, stir it gently with a spoon lest the froth should fall, and to every white of an egg grate the rinds of two lemons; shake in gently a spoonfull of double refined sugar sifted fine, lay a wet sheet of paper on a tin, and with a spoon drop the froth in little lumps on it near each other. Sift a good quantity of sugar over them, set them in the oven after the bread is out, and close up the mouth of it, which will occasion the froth to rise. As soon as they are colored they will be sufficiently baked; lay them by two bottoms together on a sieve and dry them in a cool oven.

To make common buns.

Rub four ounces of butter into two pounds of flour, a little salt, four ounces of sugar, a dessert spoonful of caraways, and a teaspoonful of ginger; put some warm milk or cream to four table spoonfulls of yeast; mix all together into a paste, but not too stiff; cover it over and set it before the fire an hour to rise, then make it into buns, put them on a tin, set them before the fire for a quarter of an hour, cover over with flannel, then brush them with very warm milk and bake them of a nice brown in a moderate oven.

Baked Custards.

Boil a pint of cream with some mace and cinna-

mon, and when it is cold, take four yolks of eggs, a little rose water, sack, nutmeg and sugar, to taste; mix them well and bake them.

Rice Custards.

Put a blade of mace, and a quartered nutmeg into a quart of cream; boil and strain it, and add to it some boiled rice and a little brandy. Sweeten it to taste, stir it till it thickens, and serve it up in cups or in a dish; it may be used either hot or cold.

To make apple cakes.

Take half a quartern of dough, roll it out thin: spread equally over it five ounces each of coffee and sugar, a little nutmeg or allspice, and two oz. of butter; then fold and roll it again two or three times, to mix well the ingredients. Afterwards roll it out thin, and spread over it four rather large apples, pared, cored, and chopped small; fold it up, and roll until mixed. Let it stand to rise after. Half a pound of butter may be added.

Sponge biscuits.

Beat the yolks of twelve eggs for half an hour; then put in one and a half pounds of beaten sifted sugar, and whisk it till it rises in bubbles; beat the whites to a strong froth, and whisk them well with the sugar and yolks, work in fourteen ounces of flour, with the rinds of two lemons grated. Bake them in tin mould buttered, in a quick oven, for an hour; before they are baked, sift a little fine sugar over them.

To make fancy biscuits.

Take one pound of almonds, one pound of sugar,

and some orange flower water. Pound the almonds very fine, and sprinkle them with orange flower water; when they are perfectly smooth to the touch, put them in a small pan, with flour sifted through a silk sieve; put the pan on a slow fire, and dry the paste till it does not stick to the fingers; move it well from the bottom to prevent its burning; then take it off, and roll it into small round fillets, to make knots, rings, &c. and cut into various shapes; make an iceing of different colours, dip one side of them in it, and set them in it, and set them on wire gratings to drain. They may be varied by strewing over them colored pistachios, or colored almonds, according to fancy.

Black currant jelly:

Put to ten quarts of ripe dry black currants, one quart of water; put them in a large stew-pot, tie paper close over them, and set them for two hours in a cool oven. Squeeze them through a fine cloth, and add to every quart of juice a pound and a half of loaf sugar broken into small pieces. Stir it till the sugar is melted, when it boils, skim it quite clean. Boil it pretty quick over a clear fire, till it jellies, which is known by dipping a skimmer into the jelley and holding it in the air; when it hangs to the spoon in a drop, it is done. If the jelley is boiled too long, it will loose its flavour and shrink very much. Pour it into pots, cover them with brandy papers, and keep them in a dry place. Red and white jellies are made in the same way.

Raspberry cream.

Rub a quart of raspberries through a hair sieve, and take out the seeds, and mix it well with cream;

sweeten it with sugar to your taste, then put into a stone jug, and raise a froth with a chocolate mill, As the froth rises take it off with a spoon, and lay it upon a hair sieve. When there is as much froth as wanted, put what cream remains in a deep china dish, and pour the frothed cream upon it, as high as it will lie on.

Strawberry jam.

Bruise very fine some scarlet strawberries, gathered when quite ripe, and put to them a little juice of red currants. Beat and sift their weight in sugar, strew it over them, and put them into a preserving pan. Set them over a clear slow fire, skim them, then boil them twenty minutes, and put them into glasses.

Raspberry jam.

Mash a quantity of fine ripe dry raspberries, strew on them their own weight of loaf sugar, and half their weight of white currant juice. Boil them half an hour over a clear slow fire, skim them well, and put them into pots or glasses; tie them down with brandy papers, and keep them dry. Strew on the sugar as quick as possible after the berries are gathered, and in order to preserve their flavour they must not stand long before boiling them.

To salt hams.

For three hams, pound and mix together half a peck of salt, half an ounce of salt prunella, three ounces of salt petre, and four pounds of coarse salt; rub the hams well with this, and lay what is to spare over them, let them lie three days, then hang them up. Take the pickle in which the hams

were, put water enough to cover the hams with more common salt, till it will bear an egg, then boil and skim it well, put it in the salting tub, and the next morning put in the hams ; keep them down like pickled pork ; in a fortnight take them out of the liquor, rub them well with brine, and hang them up to dry.

To pickle in brine.

A good brine is made of bay salt and water, thoroughly saturated, so that some of the salt remains undissolved ; into this brine the substance to be preserved is plunged, and kept covered with it. Among vegetables, French beans, artichokes, olives, and the different sorts of samphire, may be thus preserved, and among animals, herrings.

To bottle damsons.

Put damsons, before they are too ripe, into wide mouthed bottles, and cork them down tight ; then put them into a moderately heated oven, and about three hours more will do them ; observe that the oven is not too hot, otherwise it will make the fruit fly. All kinds of fruits that are bottled may be done in the same way, and they will keep two years ; after they are done, they must be put away with the mouth downward, in a cool place, to keep them from fermenting.

To preserve grapes.

Take close bunches whether white or red, not too ripe, and lay them in a jar. Put to them a quarter of a pound of sugar candy, and fill the jar with common brandy. Tie them up close with a bladder, and set them in a dry place.

To dry cherries.

Having stoned the desired quantity of morello cherries, put a pound and a quarter of fine sugar to every pound; beat and sift it over the cherries, and let them stand all night. Take them out of their sugar, and to every pound of sugar, put two spoonful of water. Boil and skim it well, then put in the cherries; boil the sugar over them, and next morning strain them, and to every pound of syrup put half a pound more sugar; boil it till it is a little thicker, then put in the cherries and let them boil gently. The next day strain them, put them in a stove, and turn them every day till they are dry.

To preserve strawberries whole.

Take an equal weight of fruit and double refined sugar, lay the former in a large dish, and sprinkle half the sugar in fine powder; give a gentle shake to the dish, that the sugar may touch the under side of the fruit. Next day make a thin syrup with the remainder of the sugar; and allow one pint of red currant juice to every three pounds of strawberries; in this simmer them until they are sufficiently jellied. Choose the largest scarlets, not dead ripe.

To keep gooseberries.

Put an ounce of roche alum beat very fine, into a large pan of boiling hard water; place a few gooseberries at the bottom of a hair sieve, and hold them in the water till they turn white. Then take out the sieve, and spread the gooseberries between two cloths; put more into the sieve, then repeat it till they are all done. Put the water into a glazed pot until the next day, then put the gooseberries

into wide mouthed bottles, pick out all the cracked and broken ones, pour the water clear out of the pot, and fill the bottles with it, cork them loosely and let them stand a fortnight. If they rise to the corks, take them out and let them stand two or three days uncorked, then cork them close again

To make cream of roses.

Take one pound of oil of sweet almonds, one ounce of spermaceti, one ounce of white wax, one pint of rose water, and two drachms of Malta rose or nerolet essence. Put the oil, spermaceti, and wax, into a well glazed pipkin, over a clear fire, and when melted, pour in the rose water by degrees, and keep heating, till the compound becomes like pomatum. Now add the essence, and then put the cream into small pots or jars, which must be well covered with pieces of bladder, and soft skin leather.

Pearl water for the face.

Put half a pound of the best Spanish oil soap, scraped very fine, into a gallon of boiling water, stir it well for some time, and let it stand till cold. Add a quart of rectified spirit of wine, and half an ounce of oil of rosemary; stir them again. This compound liquid, when put up in proper phials, in Italy, is called tincture of pearls. It is an excellent cosmetic for removing freckles from the face, and for improving the complexion.

Common almond paste

To make this paste, take six pounds of fresh almonds, which blanch and beat in a stone mortar, with a sufficient quantity of rose water. Now add

a pound of finely drained honey, and mix the whole well together. This paste, which is exceedingly good for the hands, is to be put into small pots for sale. If this paste gets dry, rub it up on a marble slab with rose water. To prevent this dryness, put about half a teaspoonful of this water on the top of each pot, before tying up.

An astringent for the teeth.

Take of fresh conserve of roses two ounces, the juice of half a sour lemon, a little very rough claret, and six ounces of coral tooth powder. Make them into a paste, which put up in small pots; and if it dry by standing, moisten with lemon juice and wine as before.

To prevent the tooth ache.

Rub well the teeth and gums with a hard tooth-brush, using the flowers of sulphur as a tooth powder, every night on going to bed; and if it is done after dinner it will be best: this is an excellent preservative to the teeth, and void of any unpleasant smell.

A radical cure for the tooth ache.

Use as a tooth powder the Spanish snuff called Sibella, and it will clean the teeth as well as any other powder, and totally prevent the tooth-ache; and make a regular practice of washing behind the ears with cold water every morning, the remedy is infallible.

To make rose lip salve.

Put eight ounces of the best olive oil into a wide mouthed bottle, add two ounces of the small parts

of **alkanet** root. Stop up the bottle, and set it in the sun; shake it often, until it be of a beautiful crimson. Now strain the oil off very clear from the roots, and add to it, in a glazed pipkin, three ounces of very fine white wax, and the same quantity of fresh clean mutton suet. Deer suet is too brittle, and also apt to turn yellow. Melt this by a slow fire, and perfume it when taken off, with forty drops of oil of rhodium, or of lavender. When cold put it into small gallipots, or rather whilst in a liquid state.

The common way is to make this salve up into small cakes; but in that form the colour is apt to be impaired.

This salve never fails to cure chopped or sore lips, if applied pretty freely at bed time, in the course of a day or two at farthest.

To sweeten the breath.

Take two ounces of terra japonica; half an ounce of sugar candy, both in powder. Grind one drachm of the best ambergris with ten grains of pure musk; and dissolve a quarter of an ounce of clean gum tragacanth in two ounces of orange flour water. Mix all together, so as to form a paste, which roll into pieces of the thickness of a straw. Cut these into pieces, and lay them in clean paper. This is an excellent perfume for those whose breath is disagreeable.

Excellent perfume for gloves.

Take of damask or rose scent, half an ounce, the spirit of cloves and mace, each a drachm; frankincense, one quarter of an ounce. Mix them together, and lay them in papers, and when hard,

press the gloves; they will take the scent in twenty-four hours, and hardly ever lose it.

To perfume clothes.

Take of oven-dried best cloves, cedar and rhubarb wood, each one ounce, beat them to a powder and sprinkle them in a box or chest, where they will create a most beautiful scent, and preserve the apparel against moths.

To preserve brass ornaments.

Brass ornaments, when not gilt or lackered, may be cleaned in the same way, and a fine colour may be given to them by two simple processes. The first is to beat sal ammoniac into a fine powder, then to moisten it with soft water, rubbing it on the ornaments, which must be heated over charcoal, and rubbed dry with bran and whiting. The second is to wash the brass work with roche alum boiled in strong ley, in the proportion of an ounce to a pint; when dry it must be rubbed with fine tripoli. Either of these processes will give to brass the brilliancy of gold.

To clean gold lace.

Gold lace is easily cleaned and restored to its original brightness by rubbing it with a soft brush dipped in roche alum burnt, sifted to a very fine powder.

To make cement for metals.

Take of gum mastic, 10 grains,—rectified spirit of wine, 2 drachms. Add 2 ounces of strong isinglass glue, made with brandy, and 10 grains of the true gum ammoniac. Dissolve all together;

and keep it stopped in a phial. When intended to be used, set it in warm water.

To take out spots of ink.

As soon as the accident happens, wet the place with juice of sorrel or lemon, or with vinegar, and the best hard white soap.

To make red sealing wax.

Take of shell-lac, well powdered, two parts, of rosin and vermilion, powdered, each, 1 part. Mix them well together and melt them over a gentle fire, and when the ingredients seem thoroughly incorporated, work the wax into sticks. Where shell-lac cannot be procured, seed-lac may be substituted for it.

The quantity of vermilion may be diminished without any injury to the sealing wax, where it is not required to be of the highest and brightest red colour; and the rest should be of the whitest kind, as that improves the effect of the vermilion.

Black sealing wax.

Proceed as directed for the red wax, only instead of the vermilion substitute the best ivory black.

A COMPLETE SYSTEM
OF
DYEING,

IN ALL ITS VARIETIES.



To prepare mordants.

DYING is a chemical process, and consists in combining a certain colouring matter with fibres of cloth. The facility with which cloth imbibes a dye, depends upon two circumstances; the union of the cloth and the dye-stuff, and the union of the dye-stuff, or dyeing material, and the fluid in which it is dissolved. Wool unites with almost all colouring matters, silk in the next degree, cotton considerably less, and linnen the least of all. To dye cotton or linen, the dye-stuff, or colouring material, should, in many cases, be dissolved in a substance for which it has a weaker connexion than with the solvent employed in the dying of wool or silk. Thus we may use the colour called oxide of iron, dissolved in sulphuric acid, to dye wool; but to dye cotton and linen, it is necessary to dissolve it in acetous acid. Were it possible to procure a sufficient number of colouring substances, having a strong affinity for cloths, to answer all the purposes of dyeing, that art would be exceedingly simple and easy. But this is by no means the case. This difficulty has, however, been obviated by a very ingenious contrivance. Some other substance is employed which strongly unites with the cloth and the colouring matter. This substance, therefore, is previously combined with the cloth, which is then dipped into a solution

containing the colour. The colour then combines with the intermediate substance, which being firmly combined with the cloth, secures the permanence of the dye. Substances employed for this purpose are denominated *mordants*.

To choose and apply them.

The most important part of dyeing is, therefore, the choice and application of *mordants*; as upon them, the permanency of almost every dye depends. Mordants must be previously dissolved in some liquid, which has a weaker union with the mordants than the cloth has; and the cloth must then be steeped in this solution, so as to saturate itself with the mordant. The most important, and most generally used mordant is *alumine*. It is used either in a state of *common alum*, in which it is combined with sulphuric acid, or in that state called acetite of alumine.

Use of alum as a mordant.

Alum, to make a mordant, is dissolved in water, and very frequently, a quantity of tartrate of potass is dissolved with it. Into this solution woolen cloth is put, and kept in it till it has absorbed as much alumine as is necessary. It is then taken out, and for the most part washed and dried. It is now a good deal heavier than it was before, owing to the alum that has combined with it.

Acetite of alumine,

Is prepared as a mordant by pouring acetite of lead into a solution of alum. This mordant is employed for cotton and linen. It answers for these much better than alum; the stuff is more easily

saturated with alumine, and takes, in consequence, a richer, and more permanent colour

White oxide of tin.

This mordant has enabled the moderns greatly to surpass many of the ancients, in the fineness of their colours; and even to equal the famous Tyrian purple; and by means of it scarlet, the brightest of all colours is produced. It is the white oxide of tin, alone, which is the *real* mordant.

Tin is used as a mordant in three states; dissolved in nitro-muriatic acid, in acetous acid, and in a mixture of sulphuric and muriatic acids: but *nitro-muriate of tin is the common mordant used by dyers*. They prepare it, by dissolving tin in diluted nitric acid, to which a certain proportion of common salt, or sal ammoniac is added.

When the nitro muriate of tin is to be used as a mordant, it is dissolved in a large quantity of water, and the cloth is dipped in the solution, and allowed to remain till sufficiently saturated. It is then taken out, washed and dried. Tartar is usually dissolved in the water along with the nitro muriate.

Red oxide of iron.

This is also used as a mordant in dyeing; it has a very strong affinity for all kinds of cloth, of which the permanency of red iron-spots, or iron-moulds on linen and cotton is a sufficient proof. As a mordant it is used in two states: in that of sulphate of iron, or copperas, and that of acetite of iron. The first, or copperas, is commonly used for *wool*. The copperas is dissolved in water, and the cloth dipped into it. It may be used also for *cotton*, but in most cases acetite of iron is prefer-

red, which is prepared by dissolving iron, or its oxide, in vinegar, sour beer, or pyroligneous acid, and the longer it is kept the better.

Tan, &c.

Tan is very frequently employed as a mordant. An infusion of nut-galls, or of sumach, or of any other substance containing tan, is made in water, and the cloth is dipped in this infusion, and allowed to remain till it has absorbed a sufficient quantity. Tan is often employed also, along with other mordants, to produce a compound mordant. Oil is also used for the same purpose, in dyeing cotton and linen. The mordants with which tan is most frequently combined, are alumine, and oxide of iron.

Besides these mordants, there are several other substances frequently used as auxiliaries, either to facilitate the combination of the mordant with the cloth or to alter the shade of colour; the chief of these are, tartar, acetate of lead, common salt, sal ammoniac, sulphate of copper, &c.

Mordants not only render the dye permanent, but have also considerable influence on the colour produced. The same colouring matter produces very different dyes, according as the mordant is changed. Suppose, for instance, that the colouring matter is cochineal; if we use the aluminous mordant, the cloth will acquire a crimson colour; but the oxide of iron produces with it, a black.

In dyeing, then, it is not only necessary to procure a mordant which has a sufficiently strong affinity for the colouring matter and cloth, and a colouring matter which possesses the wished-for colour in perfection; but we must procure a mordant and a colouring matter of such a nature, that

when combined together, they shall possess the wished-for colour in perfection; and even a great variety of colours may be produced with a single dye-stuff, provided we change the mordant sufficiently.

To determine the effects of various salts or mordants on colours.

The dye of madder.

For a madder red on woollens, the best quantity of madder is one half of the weight of the woollens that are to be dyed; the best proportion of salts to be used is five parts of alum and one of red tartar for sixteen parts of the stuff.

A variation in the proportion of the salts, wholly alters the colour that the madder naturally gives. If the alum is lessened, and the tartar increased, the dye proves a red cinnamon. If the alum be entirely omitted, the red wholly disappears, and a durable tawny cinnamon is produced.

If woollens are boiled in weak pearlash and water, the greater part of the colour is destroyed. A solution of soap discharges part of the colour, and leaves the remaining more beautiful.

Volatile alkalies heighten the red colour of the madder, but they make the dye fugitive.

The dye of logwood.

Volatile alkalies salts or acids incline this to purple; the vegetable and nitrous acids render it pale; the vitriolic and marine acids deepen it.

Lime water.

In dyeing browns or blacks, especially browns, lime water is found to be a good corrective, as also

an alterative, when the goods are not come to the shade required; but practice alone can shew its utility; it answers for either woollens, silks, or cottons.

To render colours holding.

Browns and blues, or shades from them, require no preparation; but reds and yellows, either of silk, cotton, or woollen, require a preparation to make them receive the dye, and hold it fast when it has received it. Alum and tartar, boiled together, when cold, form a mastic, within the pores of the substance, that serves to retain the dye, and reflect the colour in a manner transparently.

Almost all browns are deemed fast and holding colours, without any preparation: the dyeing materials containing in themselves a sufficient degree of astringent quality to retain their own colours. Many reds are also equally holding, but none more so than those made with madder on woollens prepared with alum and tartar. A very fast red is also made with Brazil wood, by boiling the woollen in alum and tartar, and suffering the cloth to remain several days in a bag kept moist by the preparation liquor. The cause of the solidity of the colour from Brazil wood dyed after this method, arises from the alum and tartar masticating itself within the pores of the wool in quite a solid state.

There is not a drug used in the whole art of dyeing, but may be made a permanent dye, by finding out a salt, or solution of some metal, that, when once dissolved by acids, or by boiling water, will neither be affected by the air, nor be dissolved by moisture. Such are alum and tartar, the solution of tin, &c. But these salts and solutions do not

answer with all ingredients that are used in dyeing.

To purchase dyeing materials.

The names of the principal dyeing materials are alum, argol, or tartar, green copperas, verdigris, blue vitriol, roche alum, American or quercitron, and oak bark, fenugreek, logwood, old and young fustic, Brazil wood, braziletto, camwood, barwood, and other red woods, peach wood, sumach, gall, weld, madder of 3 or 4 sorts, safflower, savory, green wood, annatto, tumeric, archil, cudbear, cochineal, lac cake, lac dye, and indigo. The whole may be purchased of druggists and colourmen.

To dye wool and woollen cloths of a blue colour.

Dissolve one part of indigo in four parts of concentrated sulphuric acid; to the solution, add one part of dry carbonate of potass, and then dilute it with eight times its weight of water. The cloth must be boiled for an hour in a solution, containing 5 parts of alum, and 3 of tartar, for every 32 parts of cloth. It is then to be thrown into a *water-bath* previously prepared, containing a greater or smaller proportion of diluted sulphate of indigo, according to the shade which the cloth is intended to receive. In this bath it must be boiled till it has acquired the wished for colour.

The only colouring matters employed in dyeing blue, are woad and indigo.

Indigo has a very strong affinity for wool, silk, cotton, and linen. Every kind of cloth, therefore, may be dyed with it, without the assistance of any mordant whatever. The colour thus induced is very permanent. But indigo can only be applied to cloth in a state of solution, and the only

solvent known is sulphuric acid. The sulphate of indigo is often used to dye wool and silk blue, and is known by the name of Saxon blue.

It is not the only solution of that pigment employed in dyeing. By far the most common method is, to deprive indigo of its blue colour, and reduce it to green, and then to dissolve it in water by means of alkalies. Two different methods are employed for this purpose. The first is, to mix with indigo a solution of green oxide of iron, and different metallic sulphurates. If, therefore, indigo, lime, and green sulphate of iron, are mixed together in water, the indigo gradually loses its blue colour, becomes green, and is dissolved. The *second* method is, to mix the indigo in water, with certain vegetable substances which readily undergo fermentation; the indigo is dissolved by means of quick lime or alkali, which is added to the solution.

The *first* of these methods is usually followed in dyeing *cotton* and *linen*; the *second*, in dyeing *wool* and *silk*.

In the dyeing of wool, woad and bran are commonly employed as vegetable ferments, and lime as the solvent of the green base of the indigo. Woad itself contains a colouring matter precisely similar to indigo; and by following the common process, indigo may be extracted from it. In the usual state of woad, when purchased by the dyer, the indigo, which it contains, is probably not far from the state of green pollen. Its quantity in woad is but small, and it is mixed with a great proportion of other vegetable matter.

When the cloth is first taken out of the vat, it is of a green colour; but it soon becomes blue. It ought to be carefully washed, to carry off the un-

combined particles. This solution of indigo is liable to two inconveniences: first, it is apt sometimes to run too fast into the putrid fermentation; this may be known by the putrid vapours which it exhales, and by the disappearing of the green colour. In this state it would soon destroy the indigo altogether. The inconvenience is remedied by adding more lime, which has the property of moderating the putrescent tendency. Secondly, sometimes the fermentation goes on too languidly. This defect is remedied by adding more bran, or woad, in order to diminish the proportion of thick lime.

To make chemic blue and green.

Chemic for light blues and greens, on silk, cotton, or woollen, and for cleaning and whitening cottons, is made by the following process:—

Take 1 lb. of the best oil of vitriol, which pour upon 1 ounce of the best Spanish flora indigo, well pounded and sifted: add to this, after it has been well stirred, a small lump of common pearlash as big as a pea, or from that to the size of 2 peas, this will immediately raise a great fermentation, and cause the indigo to dissolve in minuter and finer particles than otherwise. As soon as this fermentation ceases, put it into a bottle tightly corked, and it may be used the next day. Observe, if more than the quantity prescribed of pearlash should be used, it will deaden and sully the colour.

Chemic for green, as above for blue, is made by only adding one-fourth more of the oil of vitriol.

If the chemic is to be used for woollen, East India indigo will answer the purpose even better than

Spanish indigo, and at one quarter of the price; but the oil of vitriol is good for both.

To make a solution of tin in aqua regia.

Mix together 8 ounces of filtered river water, and 8 ounces of double aqua fortis; add gradually half an ounce of salammoniac dissolved piece by piece, and 2 drachms of salt petre. Then take 1 ounce of refined block tin: put it into an iron pan, and set it over the fire; when melted, hold it 4 or 5 feet over the vessel, and drop it into water, so as to let it fall in pieces.

Next put a small piece of this granulated tin into the above aqua-regia, and when the last piece disappears, add more gradually till the whole is mixed; mind and keep it firmly corked. When finished it will produce a most excellent yellow, though should it fail in that respect, it will not be the worse for use; keep it cool, as heat will injure and even spoil it.

To make muriate of tin

Take 8 ounces of muriatic acid, and dissolve in it, by slow degrees half an ounce of granulated tin; when this is done pour off the clear liquid into a bottle and weaken it, if required, with pure filtered river water.

To determine the effect of various waters on different colours.

Snow water contains a little muriate of lime, and some slight traces of nitrate of lime; rain water has the same salts in a larger quantity, and also carbonic acid; spring water most frequently contains carbonate of lime, muriate of lime, muri-

ate of soda, or carbonate of soda. River water has the same substances, but in less abundance. Well water contains sulphate of lime or nitrate of pot-ash besides the above-named salts. Should the water contain a salt, or a mineral acid, in the first instance, an acid will be requisite to neutralize it, and in the second, an alkali. Thus waters of any quality may be saturated by their opposites, and rendered neutral.

To discharge colours.

The dyers generally put all coloured silks which are to be discharged, into a copper in which half a pound or a pound of white soap has been dissolved. They are then boiled off, and when the copper begins to be too full of colour, the silks are taken out and rinsed in warm water. In the interim a fresh solution of soap is to be added to the copper, and then proceed as before till all the colour is discharged. For those colours that are wanted to be effectually discharged, such as greys, cinnamons, &c. when soap will not do, tartar must be used. For slate colours, greenish drabs, olive drabs, &c. oil of vitriol in warm water must be used; if other colours, roche alum must be boiled in the copper, then cooled down and the silks entered and boiled off, recollecting to rinse them before they are again dyed. A small quantity of muriatic acid, diluted in warm water, must be used to discharge some fast colours; the goods must be afterwards well rinsed in warm and cold water to prevent any injury to the stalk.

To discharge cinnamons, greys, &c. when dyed too full.

Take some tartar, pounded in a mortar, sift it

into a bucket, then pour over it some boiling water. The silks, &c. may then be run through the clearest of this liquor, which will discharge the colour; but if the dye does not take on again evenly, more tartar may be added, and the goods run through as before.

1 *To re-dye or change the colours of garments, &c.*

2 The change of colour depends upon the ingredients with which the garments have been dyed. Sometimes when these have been well cleaned, more dying stuff must be added, which will afford the colour intended; and sometimes the colour already on the cloth must be discharged and the articles re-dyed.

Every colour in nature will dye black, whether blue, yellow, red or brown, and black will always dye black again. All colours will take the same colour again which they already possess; and blues can be made green or black: green may be brown, and brown green, and every colour on re-dyeing will take a darker tint than that at first.

3 Yellows, browns, and blues, are not easily discharged; maroons, reds, of some kinds, olives, &c. may be discharged.

For maroons, a small quantity of roche alum may be boiled in a copper, and when it is dissolved, put in the goods, keep them boiling, and probably, in a few minutes, enough of it will be discharged to take the colour intended.

Olives, greys, &c. are discharged by putting in two or three table spoonfuls, more or less, of oil of vitriol: then put in the garment, &c. and boil, and it will become white. If chemic green, either alum, pearl-ash, or soap, will discharge it off to

the yellow; this yellow may mostly be boiled off with soap, if it has received a preparation for taking the chemic blue. Muriatic acid used at a hand heat will discharge most colours. A black may be dyed a maroon, claret, green or a dark brown; and it often happens that black is dyed claret, green, or dark brown; but green is the principal colour into which black is changed.

To alum silks.

Silk should be alumed cold, for when it is alumed hot, it is deprived of a great part of its lustre. The alum liquor should always be strong for silks, as they take the dye more readily afterwards.

To dye silk blue.

Silk is dyed blue by a ferment of six parts of bran, six of indigo, six of potass, and one of madder. To dye it of a dark blue, it must previously receive what is called a *ground-colour*; a red dye-stuff, called archil, is used for this purpose.

To dye cotton and linen blue.

Cotton and linen are dyed blue by a solution of one part of indigo, one part of green sulphate of iron, and two parts of quick-lime

Yellow dyes.

The principal colouring matters for dyeing yellow, are weld, fustic, and quercitron bark. Yellow colouring matters have too weak an affinity for cloth, to produce permanent colours without the use of *mordants*. Cloth, therefore, before it is dyed yellow, is always prepared by soaking it in alumine. Oxide of tin is sometimes used when

very fine yellows are wanting. Tan is often employed as subsidiary to alumine, and in order to fix it more copiously on cotton and linen. Tartar is also used as an auxiliary, to brighten the colour; and muriate of soda, sulphate of lime, and even the sulphate of iron, to render the shade deeper. The yellow dye by means of fustic is more permanent, but not so beautiful as that given by weld, or quercitron. As it is permanent, and not much injured by acids, it is often used in dyeing compound colours, where a yellow is required. The mordant is alumine. When the mordant is oxide of iron, fustic dyes a good permanent drab colour. Weld, and quercitron bark yield nearly the same kind of colour; but the bark yields colouring matter in greater abundance and is cheaper than weld. The method of using each of these dye-stuffs is nearly the same.

To dye woollens yellow.

Wool may be dyed yellow by the following process; let it be boiled for an hour or more, with above one-sixth of its weight of alum, dissolved in a sufficient quantity of water as a mordant. It is then to be plunged, without being rinsed, into a bath of warm water, containing as much quercitron bark as equals the weight of the alum employed as a mordant. The cloth is to be turned through the boiling liquid, till it has acquired the intended colour. Then, a quantity of clean powdered chalk, equal to the hundredth part of the weight of the cloth, is to be stirred in, and the operation of dyeing continued for eight or ten minutes longer. By this method a pretty deep and lively yellow may be given.

To dye silks yellow.

Silk may be dyed of different shades of yellow, either by weld or quercitron bark, but the last is the cheapest of the two. The proportion should be from one to two parts of bark, to 12 parts of silk, according to the shade. The bark, tied up in a bag, should be put into the dyeing vessel, whilst the water which it contains is cold; and when it has acquired the heat of about 100 degrees, the silk, having been previously alumed, should be dipped in, and continued, till it assumes the wished-for colour. When the shade is required to be deep, a little chalk, or pearl-ash should be added towards the end of the operation.

To dye linens and cottons yellow.

The mordant should be acetate of alumine, prepared by dissolving one part of acetate of lead, and three parts of alum, in a sufficient quantity of water. This solution should be heated to the temperature of 100 degrees: the cloth should be soaked in it for two hours, then wrung out and dried. The soaking may be repeated, and the cloth again dried as before. It is then to be barely wetted with lime-water, and afterwards dried. The soaking in the acetate of alumine may be again repeated; and if the shade of yellow is required to be very bright and durable, the alternate wetting with lime-water and soaking in the mordant may be repeated three or four times.

The *dyeing-bath* is prepared by putting 12 or 18 parts of quercitron bark (according to the depth of the shade required,) tied up in a bag, into a sufficient quantity of cold water. Into this bath the cloth is to be put, and turned in it for an hour,

while its temperature is gradually raised to about 120 degrees. It is then to be brought to a boiling heat, and the cloth allowed to remain in it only for a few minutes. If it is kept long at a boiling heat, the yellow acquires a shade of brown

To fix a fine mineral yellow upon wool, silk, cotton, hemp, &c.

Mix one pound of sulphur, two pounds of white oxide of arsenic, and five parts of pearl-ash; and melt the whole in a crucible, at a heat a little short of redness. The result is a yellow mass, which is to be dissolved in hot water; and the liquor filtered, to separate it from a sediment formed chiefly of metallic arsenic, in shining plates, and in a small part, of a chocolate-colored matter, which appears to be a sub-sulphuret of arsenic. Dilute the filtered liquor, then add weak sulphuric acid, which produces a flocculent precipitate, of a most brilliant yellow colour. This precipitate, washed upon a cloth filter, dissolves with the utmost ease in liquid ammonia, giving a yellow solution, which colour is to be removed by an excess of the same alkali.

To prepare realgar.

The most brilliant and permanent yellow that can be imagined, is the sulphuret of arsenic, or realgar, into which more or less diluted, according to the depth of tint required, the wool, silk, cotton, or linen, is to be dipped. All metallic utensils must be carefully avoided. When the stuffs come out of this bath they are colorless, but they insensibly take on a yellow hue as the ammonia evaporates. they are to be exposed as equally as possible to a current of open air; and when the color is well

come out, and no longer heightens, they are to be washed and dried.

Wood should be felled in the ammoniacal solution, and should remain in it till it is thoroughly soaked; then, very slightly and uniformly pressed, or else merely set to drain of itself. Silk, cotton, hemp, and flax, are only to be dipped in the dyeing liquid, which they easily take. They must then be well pressed.

The sulphuret of arsenic will give every imaginable tint to stuffs, from the deep golden yellow to the lightest straw-colour, which has the invariable advantage of never fading, of lasting even longer than the stuffs themselves, and of resisting all reagents, except alkalies. Hence it is peculiarly fitted for costly tapestry, velvets, and other articles of furniture which are not in danger of being washed, with alkalies or soap, and to which the durability of colour is a most important object. It may also be used with advantage in paper-staining.

Red dyes.

The colouring matters employed for dyeing red, are archil, madder, carthamus, kermes, cochineal, and Brazil-wood.

To dye woollens red, crimson, and scarlet.

Coarse woollen stuffs are dyed red with madder or archil: but fine cloth is almost exclusively dyed with cochineal, though the colour which it receives from kermes, is much more durable. Brazil-wood is scarcely used, except as an auxiliary, because the colour which it imparts to wool, is not permanent.

Wool is dyed crimson, by first impregnating it

with alumine, by means of an alum bath, and then boiling it in a decoction of cochineal, till it has acquired the wished-colour. The crimson will be finer, if the tin-mordant is substituted for alum; indeed, it is usual with dyers, to add a little nitro-muriate of tin, when they want fine crimsons. The addition of archil and potass to the cochineal, both renders the crimson darker, and gives it more bloom; but the bloom very soon vanishes. For paler crimsons, one-half of the cochineal is withdrawn, and madder substituted in its place.

Wool may be dyed scarlet, by first boiling it in a solution of murio-sulphate of tin, then dying it pale yellow with quercitron bark, and afterwards crimson with cochinel; for scarlet is a compound colour, consisting of crimson mixed with a little yellow.

To carry the colour into the body of the cloth.

Make the moistened cloth pass through between two rollers placed within and at the bottom of the dye-vat; so that the web, passing from one windlass through the dye-vat, and being strongly compressed by the rollers in its passage to another windlass, all the remaining water is driven out, and is replaced by the colouring liquid, so as to receive colour into its very centre. The winding should be continued backwards and forwards from one windlass to the other, and through the rolling-press, till the dye is of sufficient intensity.

To dye silks red, crimson, &c.

Silk is usually dyed red with cochineal, or carthamus, and sometimes with Brazil-wood. Kermes does not answer for silk; madder is scarcely ever

used for that purpose, because it does not yield a colour bright enough. Archil is employed to give silk a bloom; but it is scarcely ever used by itself, unless when the colour wanted is lilac.

Silk may be dyed crimson by steeping it in a solution of alum, and then dyeing in the usual way in a cochineal bath.

The colours known by the names of *poppy*, *cherry*, *rose*, and *flesh colour*, are given to silk by means of carthamus. The process consists merely in keeping the silk as long as it extracts any colour, in an alkaline solution of carthamus, into which as much lemon-juice, as gives it a fine cherry-red colour, has been poured.

Silk cannot be dyed a full scarlet; but a colour approaching to scarlet may be given to it, by first impregnating the stuff with murio-sulphate of tin, and afterwards dyeing it in a bath, composed of four parts of cochineal, and four parts of quercitron bark. To give the colour more body, both the mordant and the dye may be repeated.

A colour, approaching to scarlet may be given to silk, by first dyeing it in crimson, then dyeing it with carthamus; and lastly, yellow, without heat.

To dye linens and collons red, scarlet, &c.

Cotton and linen are dyed red with madder. The process was borrowed from the east; hence the colour is often called Adrianople, or Turkey-red. The cloth is first impregnated with oil, then with galls, and lastly with alum. It is then boiled for an hour in the decoction of madder, which is commonly mixed with a quantity of blood. After the cloth is dyed, it is plunged into a soda ley in order to brighten the colour. The red given

by this process, is very permanent; and when properly conducted, it is exceedingly beautiful. The whole difficulty consists in the application of the mordant, which is by far the most complicated employed in the whole art of dyeing.

Cotton may be dyed scarlet, by means of murio-sulphate of tin, cochineal, and quercitron bark, used as for silk, but the colour is too fading to be of any value.

Black dyes.

The substances employed to give a black colour to cloth, are red oxide of iron, and tan. These two substances have a strong affinity for each other, and when combined, assume a deep black colour, not liable to be destroyed by the action of air or light.

Logwood is usually employed as an auxiliary, because it communicates lustre, and adds considerably to the fulness of the black. It is the wood of a tree which is a native of several of the West-India islands, and of that part of Mexico which surrounds the bay of Honduras. It yields its colouring matter to water. The decoction is at first a fine red, bordering on violet: but if left to itself, it gradually assumes a black colour. Acids give it a deep red colour; alkalies, a deep violet, inclining to brown: sulphate of iron renders it as black as ink, and occasions a precipitate of the same color.

Cloth, before it receives a black colour, is *usually dyed blue*: this renders the colour much fuller and finer than it would otherwise be. If the cloth is coarse, the blue dye may be too expensive; in that case, a brown colour is given, by means of walnut-peels.

To dye woollens black.

Wool is dyed black by the following process. It is boiled for two hours in a decoction of nut-galls, and afterwards kept, for two hours more, in a bath, composed of logwood and sulphate of iron, kept, during the whole time, at a scalding heat, but not boiling. During the operation, it must be frequently exposed to the air; because the green oxide of iron, of which the sulphate is composed must be converted into red oxide by absorbing oxygen, before the cloth can acquire a proper colour. The common proportions, are five parts of galls, five of sulphate of iron, and thirty of logwood, for every hundred of cloth. A little acetate of copper is commonly added to the sulphate of iron, because it is thought to improve the colour.

To dye silks black.

Silk is dyed nearly in the same manner. It is capable of combining with a great deal of tan; the quantity given is varied at the pleasure of the artist, by allowing the silk to remain a longer or shorter in the decoction

To dye cottons and linens black.

The cloth, previously dyed blue, is steeped for 24 hours in a decoction of nut-galls. A bath is prepared containing acetate of iron, formed by saturating acetic acid with brown oxide of iron: into this bath the cloth is put in small quantities at a time, wrought with the hand for a quarter of an hour; then wring out, and aired again; wrought in a fresh quantity of the bath, and afterwards aired. These alternate processes are repeated till the colour wanted is given: a decoction of alder

bark is usually mixed with the liquor containing the nut-galls.

To dye wool, &c brown.

Brown, or fawn colour, though in fact, a compound, is usually ranked among the simple colours, because it is applied to cloth by a single process. Various substances are used for brown dyes.

Walnut-peels, or the green covering of the walnut, when first separated, are white internally, but soon assume a brown, or even a black colour, on exposure to the air. They readily yield their colouring matter to water. They are usually kept in large casks, covered with water, for above a year before they are used. To dye wool brown with them, nothing more is necessary, than to steep the cloth in a decoction of them till it has acquired the wished-for colour. The depth of the shade is proportional to the strength of the decoction.

The root of the walnut-tree contains the same colouring matter, but in smaller quantity. The bark of the birch also, and many other trees, may be used for the same purpose.

To dye compound colours.

Compound colours are produced by mixing together two simple ones; or which is the same thing by dyeing cloth first of the simple colour, and then by another. These colours vary to infinity, according to the proportions of the ingredients employed. From blue, red, and yellow, red olives and greenish greys are made.

From blue, red, and brown, olives are made from the lightest to the darkest shades; and by giving

a greater shade of red, the slated and lavender greys are made.

From blue, red, and black, greys of all shades are made, such as sage, pigeon, slate, and lead greys. The king's or prince's colour is duller than usual; this mixture produces a variety of hues or colours almost to infinity.

From yellow, blue, and brown, are made the goose dung and olives of all kinds.

From brown, blue, and black, are produced brown olives, and their shades.

From the red, yellow, and brown, are derived the orange, gold colour, feuillemort, or faded leaf, dead carnations, cinnamon, fawn, and tobacco, by using two or three of the colours as required.

From yellow, red, and black, browns of every shade are made.

From blue and yellow, greens of all shades.

From red and blue, purples of all kinds are formed

To dye different shades of green.

Green is distinguished by dyers into a variety of shades, according to the depth, or the prevalence of either of the component parts. Thus, we have sea-green, grass-green, pea-green, &c.

Wool, silk, and linen, are usually dyed green, by giving them first a blue colour, and afterwards dying them yellow, when the yellow is first given, several inconveniences follow: the yellow partly separates again in the blue vat, and communicates a green colour to it; thus rendering it useless for every other purpose, except dyeing green. Any of the usual processes for dyeing blue and yellow, may be followed, taking care to proportion the

depth of the shades to that of the green required.

When sulphate of indigo is employed, it is usual to mix all the ingredients together, and to dye the cloth at once; this produces what is known by the name of Saxon, or English green.

To dye violet, purple, and lilac.

Wool is generally first dyed blue, and afterwards scarlet, in the usual manner. By means of cochineal mixed with sulphate of indigo, the process may be performed at once. Silk is first dyed crimson, by means of cochineal, and then dipped into the indigo vat. Cotton and linen are first dyed blue, and then dipped in a decoction of logwood; but a more permanent colour is given by means of oxide of iron.

To dye olive, orange, and cinnamon.

When blue is combined with red and yellow on cloth, the resulting colour is olive. Wool may be dyed orange, by first dyeing it scarlet, and then yellow. When it is dyed first with madder, the result is a cinnamon colour.

Silk is dyed orange by means of carthamus: a cinnamon colour by logwood, Brazil-wood, and fustie mixed together.

Cotton and linen receive a cinnamon colour by means of weld and madder; and an olive-colour by being passed through a blue, yellow, and then a madder bath.

To dye grey, drab, and dark brown.

If cloth is previously combined with brown oxide of iron, and afterwards dyed yellow with quercitron bark, the result will be a drab of different

shades, according to the proportion of mordant employed. When the proportion is small, the colour inclines to olive, or yellow; on the contrary, the drab may be deepened, or saddened, as the dyers term it, by mixing a little sumach with the bark.

To dye a black upon cotton, linen, and mixed goods.

Take tar, iron liquor of the very best quality; add to each gallon thereof, three quarters of a pound of fine flour, and boil it to the consistency of a thin paste. Put the liquor or paste above-mentioned into a tub belonging to a machine used in the process. The goods intended to be dyed are wound upon a roller, and passed through the liquor or paste, betwixt the two rollers; thereby completely staining or dyeing the whole mass or body of the cloth. Pass them into a very hot stove or drying-house till dry, then take cow's dung, put it into a large copper of water about scalding hot, and mix it well together, through which pass the piece of cloth until it be thoroughly softened. Wash the goods, so dunged, extremely well in water. Take a quantity of madder, or logwood, or sumach, or all of them mixed together, as the strength of the cloth and nature of the colour may require, and put them into a copper, or tub of of hot water; then enter the goods before mentioned in this liquor, and keep rinsing or moving them therein, until they are brought up to the strength of colour required. Have the goods again well washed and dried. For dyeing black, it will be proper to pass the goods a second time through the above operations; adding more or less of the dyeing-woods as before. If, after the above operations the shade of colour is too full, or too

much upon the red hue, it will be necessary to give them a little sumach, and then run them through a liquor made from iron and owler, or alder bark

Another method.

Take common iron liquor, and add three quarters of fine flour, and by boiling bring it to the consistency of a thin paste; or instead of flour, add glue or linseed, or gum, or all of them mixed together, till it is brought to a proper thickness. Then pass the goods through the machine, and follow the before mentioned operations.

To dye olives, bottle greens, purples, browns, cinnamons, or snuffs.

Take common iron liquor, or common iron liquor with alum dissolved therein, in quantity of each according to the shade of colour wanted, made into a paste or liquid, by adding flour, gum, glue, linseed, or one or more of them as before. Then put the liquor or paste above mentioned into a tub belonging to the machine, and pass the goods so intended to be dyed, through the machine. Take them from the machine, and hang them up in a very cool room, where they are to remain till they are thoroughly dry. Take cow's-dung, put it into a large copper of hot water, and mix it well together; through which pass the cloth or goods until thoroughly softened, the quantity of dung and time required, being proportioned as before.

The goods after this process being well washed, take a quantity of liquor made from madder, logwood, sumach, fustic, Brazil, woad, quercitron bark, peach wood, or other woods, to produce the colour wanted, or more of them; and if necessa-

ry dilute this liquor with water, according to the shade or fulness of colour wanted to be dyed. Then work the goods through this liquor. after which pass them through cold or warm water, according to colour, the proper application of which is well known to dyers, adding a little alum, copperas, or Roman vitriol, or two or more of them first dissolved in water. Then wash them off in warm water, and dry them. But if the colour is not sufficiently full, repeat the same operations till it is brought to the shade required.

To dye crimson, red, orange, or yellow.

Take red liquor, such as is generally made from alum, and dilute it with water according to the strength or shade of colour wanted to dye, bringing it to the consistency of a paste or liquid, as before described. Then pass the cloth through the machine; which being dried in a cool room, pass it through the operations of dunging and washing as before. Take a quantity of liquor, made from cochineal, madder, peach-wood, Brazil, logwood, woad, fustic, sumach, or any two or more of them proportioned in strength to the shade or colour wanted to dye, and work the goods through this liquor till they are brought to the shade of colour required; after which wash them in cold or warm water, and dry them.

To dye cotton, wool, and silk, with Prussian blue.

Immerse the cotton into a large tub of water slightly acidulated and charged with prussiate of potass. These sorts of stuffs dyed in Prussian blue, and then in olive transformed into green, are particularly sought after in trade. By processes

analagous to those employed for cotton stuffs, the inventor has obtained the same shades and colours, on samples of silk; and for many years, he has even succeeded in fixing Prussian blue on wool, and in producing on cloth the same shades as on cotton and silk.

To precipitate acetates of lead and copper, on wool, silk and cotton.

Soak the stuff which is required to be dyed, in a solution of acetate, or rather sub-acetate of lead, wring it when it comes out of the bath, drying it in the shade, afterwards wash it, and again immerse it in water charged with sulphurated hydrogen gas. By this process are obtained, in a few minutes, rich and well laid shades, which vary from the clear *vigone* colour, to the deep brown, according to the force of the mordant and the number of the immersions of the stuffs in the two bathing vessels. From the order of affinities, it is the wool which takes colour the best, afterwards the silk, then the cotton, and lastly the thread, which appears little apt to combine with the mordant.

The different colours above indicated, resist the air well, likewise feeble acids, alkalies, and boiling soap, which modify their shades in an imperceptible manner, and these shades are so striking, that it will appear difficult to obtain them in any other manner.

This new kind of dye is very economical. The sulphurated hydrogen gas is obtained from a mixture of two parts of iron filings, and one of brimstone melted in a pot; this brimstone is bruised, introduced into a mattrass, and the gas is removed

by sulphuric acid extended in water to a mild heat
The gas absorbs abundantly in cold water.

To dye cotton cloth black.

Take a quantity of *Moracca* nuts, which, in Bengal, are sold at 2s. per cwt., and boil them in water, in close earthen vessels, with the leaves of the tree. During the boiling, a whitish substance, formed from the mucilage and oil of the nuts, will rise to the surface; this must be taken off and preserved. The cloth intended to be black, must be printed with this scum, and then dyed, after which let it be passed through lime water, when the printed figures will be changed to a full and permanent black

To dye wool a permanent blue colour.

Take four ounces of the best indigo, reduce it to a very fine powder, and add twelve pounds of wool in the grease; put the whole into a copper large enough to contain all the wool to be dyed. As soon as the requisite colour is obtained, let the wool be well washed and dried. The liquor remaining may be again used, to produce lighter blues. The colour will be as beautiful and permanent as the finest blue, produced by woad, and the wool, by this method will loose less in weight than if it had been previously scoured.

To produce the Swiss deep and pale red tropical mordants.

When the cotton cloth has been freed by steeping and boiling in soap and water, from the paste used by the weaver, and any other impurities it may have acquired, immerse it thoroughly, or, as

it is called, tramp or pad it in a solution of any alkali, and oil of grease, forming an imperfect soap, or boil it in any of the perfect soaps dissolved in water, or in a solution of soda and gallipoli oil, in the proportion of 1 gallon of oil to 20 gallons of soda lees, at the strength of 4 degrees and a half; then dry the cloth in the stove, and repeat the process several times, which may be varied at pleasure, according to the lustre and durability of the colour wanted, stove-drying the cloth between every immersion. To the above solutions add a little sheep's dung, for the first three immersions; these are called the dung liquors; after the cloth has received the dung liquors, it is steeped for 12 hours in a quantity of water, 110 degrees of Fahrenheit; this is called the green steep. The cloth being again stove dried, is immersed as above in a solution of alkali and oil, or grease, or boiled in perfect soap dissolved, but without the sheep's dung; or oftener, according to the brilliancy of colours wanted, stove-dying as before, between every immersion; these are called the white liquors. Steep the cloth for twelve hours at 125 degrees Fahrenheit, which forms what is called the white steep. The cloth being now thoroughly washed in cold water, and dried, is ready to receive, first, the pink mordant, which is composed as follows:—take equal quantities, by measurement, of a decoction of galls at the strength of four to six, and a solution of alum at one half degree, the alum being previously saturated with whitening, or any other alkali, in the proportion of 1 ounce to the pound weight of alum; mix them together, and raise the temperature to 140 degrees of Fahrenheit, or as hot as can be handled. By immersion, as former-

ly mentioned, in this mixture, the cloth, when dyed and cleared, exhibits a beautiful pink, equal, if not superior, to that produced by cochineal.

To dye silks and satins brown in the small way.

Fill the copper with river water, when it gently boils, put in a quarter of a pound of chipped fustic, two ounces of madder, one ounce of sumach, and half an ounce of camwood; but if not required to be so red, the cam-wood may be omitted. These should boil, at least, from half an hour to two hours, that the ingredients may be well incorporated. The copper must then be cooled down by pouring in cold water: the goods may then be put in, and simmered gently from half an hour to an hour. If this colour should appear to want darkening, or saddening, it may be done by taking out the goods, and adding a small quantity of old black liquor; a small piece of green copperas may be used: rinse in two or three water, and hang up to dry.

To dye silks of fawn colour drabs.

Boil one ounce of fustic, half an ounce of alder bark, and two drachms of archil. From one to four drachms of the best crop madder must be added to a very small quantity of old black liquor, if it be required darker.

To dye a silk shawl scarlet.

First dissolve two ounces of white soap in boiling water, handle the shawl through this liquor, now and then rubbing such places with the hands as may appear dirty, till it is as clean as water will make it. A second, or even a third liquor may be

used, if required: the snawl must be rinsed out in warm water.

Then take half an ounce of the best Spanish annatto, and dissolve it in hot water; pour this solution into a pan of warm water, and handle the shawl through this for a quarter of an hour; then take it out and rinse it in clean water. In the meanwhile dissolve a piece of alum of the size of a horse bean in warm water, and let the shawl remain in this half an hour; take it out and rinse it in clear water. Then boil a quarter of an ounce of the best cochineal for twenty minutes, dip it out of the copper into a pan, and let the shawl remain in this from twenty minutes to half an hour, which will make it a full blood red. Then take out the shawl, and add to the liquor in the pan a quart more of that out of the copper, if there is as much remaining, and about half a small wine-glassful of the solution of tin: when cold, rinse it slightly out in spring water.

To dye a silk shawl crimson.

Take about a table spoonful of cudbear, put it into a small pan, pour boiling water upon it, stir and let it stand a few minutes, then put in the silk, and turn it over a short time, and when the colour is full enough, take it out; but if it should require more violet or crimson, add a spoonful or two of purple archil to some warm water, and dry it within doors. To finish it, it must be mangled or clandered, and may be pressed, if such a convenience is at hand.

To dye silk lilac.

For every pound of silk, take one pound and a

half of archil, mix it well with the liquor; make it boil a quarter of an hour, dip the silk quickly, then let it cool, and wash it in river water, and a fine half violet, or lilac, more or less full, will be obtained.

To dye thick silks, satins, silk stockings, &c. of a flesh colour.

Wash the stockings clean in soap and water, then rinse them in hot water; if they should not then appear perfectly clear, cut half an ounce of white soap into thin slices, and put it into a saucepan half full of boiling water; when this soap is dissolved, cool the water in the pan, then put in the stockings, and simmer for twenty minutes; take them out, and rinse in hot water; in the interim pour three table spoonsful of purple archil into a wash-hand basin half full of hot water; put the stockings in this dye water, and when of the shade called half violet or lilac, take them from the dye water, and slightly rinse them in cold; when dry hang them up in a close room in which sulphur is burnt; when they are evenly bleached to the shade required of flesh colour, take them from the sulphuring-room, and finish them by rubbing the right side with a clean flannel. Some persons calender them afterwards. Satins and silks are done the same way.

To dye silk stockings black.

These are dyed like other silks, excepting that they must be steeped a day or two in black liquor, before they are put into the black silk dye. At first they will look like an iron grey; but to finish and black them, they must be put on wooden legs,

laid on a table, and rubbed with the oily rubber, or flannel, upon which is oil of olives, and then the more they are rubbed the better. Each pair of stockings will require half a table spoonful of oil, at least, and half an hour's rubbing, to finish them well. Sweet oil is the best in this process, as it leaves no disagreeable smell.

To dye black cloth green.

Clean the cloth well with bullock's gall and water, and rinse in warm water; then make a copper full of river water boiling hot, and take from one pound to one pound and a half of fustic; put it in, and boil it twenty minutes, to which add a lump of alum of the size of a walnut; when this is dissolved in the copper, put in the coat, and boil it twenty minutes; then take it out, and add a small wine glass, three parts full, of chemic blue, and boil again from half an hour to an hour, and the cloth will be a beautiful dark green; then wash out and dry.



MISCELLANEOUS RECEIPTS FOR DYING, STAINING, &c.

To turn red hair black.

Take a pint of the liquor of pickled herrings, half a pound of lamp-black, and two ounces of the rust of iron. Mix and boil them for twenty minutes, then strain and rub the liquid well into the roots of the hair.

To dye bristles or feathers green.

Take of verdigris and verditer, each 1 ounce,

gum water 1 pint; mix them well, and dip the bristles or feathers, they having been first soaked in hot water, into the said mixture.

Blue.—Take of indigo and risse, each 1 ounce, and a piece of alum the size of a hazel nut; put them into gum water, and dip the materials into it hot, hang them up to dry, and clap them well that they may be open, and by changing the colours, the aforesaid materials may be in this manner dyed of any colour; for purple use lake and indigo; for carnation, vermillion and smalt.

Red.—Take an ounce of Brazil wood in powder, half an ounce of alum, a quarter of an ounce of vermillion, and a pint of vinegar, boil them up to a moderate thickness, and dip the bristles or feathers, they having been first soaked in hot water, in to the said mixture.

To dye or colour horse hair

Steep in water wherein a small quantity of turpentine has been boiled for the space of two hours; then having prepared the colour very hot, boil the hair therein, and any colour, black excepted, will take, but that will only take a dark red or dark blue, &c.

To dye gloves.

Take the colour suitable for the occasion; if dark take Spanish brown and black earth; if lighter, yellow and whiting; and so on with other colours: mix them with a moderate fire, daub the gloves over with the colour wet, and let them hang till they are dry, then beat out the superfluity of the colour, and smooth them over with a stretching or sleeking stick, reducing them to their proper shape.

To dye white gloves purple.

Boil four ounces of logwood and two ounces of roche alum in three pints of soft water till half wasted. Let the liquor stand to cool after straining. Let the gloves be nicely mended, then with a brush rub them over, and when dry repeat it. Twice is sufficient, unless the colour is to be very dark; when dry, rub off the loose dye with a coarse cloth; beat up the white of an egg, and with a sponge rub it over the leather. The dye will stain the hands, but wetting them with vinegar before they are washed will take it off.

To prepare wood for dyeing.

The wood mostly used to dye black, is pear-tree, holly, and beach, all of which take a beautiful black colour. Do not use wood that has been long cut, or aged, but let it be as fresh as possible. After the veneers have had one hour's boiling, and then taken out to cool, the colour is always much stronger. When dyed, they should be dried in the air, and not by the fire, nor in a kiln of any kind, as artificial heat tends to destroy the colour.

In order to dye blue, green, red or other colours, take clear holly. Put the veneers into a box or trough, with clear water, and let them remain four or five days, changing the water once or twice as occasion may require, the water will clear the wood of slime, &c. Let them dry about twelve hours before they are put into the dye; the colour will strike quicker, and be of a brighter hue.

To prepare blue turnsole for staining wood.

Boil four ounces of turnsole in a pint and a half of water, in which lime has been slaked.

To stain oak a mahogany colour.

Boil together Brazil wood and Roman alum, and before it is applied to the wood, a little potash is to be added to it. A suitable varnish for wood, thus tinged, may be made by dissolving amber in oil of turpentine, mixed with a small portion of linseed oil.

Ebony-Black.

Steep the wood for two or three days in lukewarm water, in which a little alum has been dissolved; then put a handful of logwood, cut small, into a pint of water, and boil it down to less than half a pint. If a little indigo is added, the colour will be more beautiful. Spread a layer of this liquor quite hot on the wood with a pencil, which will give it a violet colour. When it is dry, spread on another layer; dry it again, and give it a third: then boil verdigris at discretion in its own vinegar, and spread a layer of it on the wood: when it is dry, rub it with a brush, and then with oiled chamois skin. This gives a fine black, and imitates perfectly the colour of ebony.

Another method.

After forming the wood into the destined figure, rub it with aqua-fortis a little diluted. Small threads of wood will rise in the drying which is to be rubbed off with pumice stone. Repeat this process again, and then rub the wood with the following composition; put into a glazed earthen vessel a pint of strong vinegar, two ounces of fine iron filings, and half a pound of pounded galls, and allow them to infuse for three or four hours on hot cinders. At the end of this time augment the fire,

and pour into the vessel four ounces of coperas (sulphate of iron) and a chopin of water having half an ounce of borax, and as much indigo dissolved in it; and make the whole boil till a froth rises. Rub several layers of this upon the wood; and when it is dry, polish it with leather on which a little tripoli has been put.

To stain beech-wood a mahogany colour.

Break two ounces of dragon's blood in pieces, and put them into a quart of rectified spirit of wine; let the bottle stand in a warm place, and shake it frequently. When dissolved it is fit for use.

Another method.

Boil one pound of logwood in four quarts of water, and add a double handful of walnut peeling. Boil it up again, take out the chips, add a pint of the best vinegar, and it will be fit for use.

To stain musical instruments.

Crimson.

Boil one pound of ground Brazil-wood in three quarts of water for an hour; strain it, and add half an ounce of cochineal; boil it again for half an hour gently, and it will be fit for use.

Purple.

Boil a pound of chip logwood in three quarts of water for an hour; then add four ounces of pearl-ash, and two ounces of indigo pounded.

To stain box wood brown.

Hold the work to the fire, that it may receive a gentle warmth; then take aqua fortis, and with a

feather pass it over the work, till it changes to a fine brown. Then oil and polish it.

To dye wood a silver grey.

Let not the veneers be too dry; when put into the copper, pour hot iron liquor (acetate of iron) over them, and add one pound of chip logwood with two ounces of bruised nut-galls. Then boil another pot of iron liquor to supply the copper, keeping the veneers covered and boiling two hours a day, until thoroughly penetrated.

Bright yellow.—A very small bit of aloes put into the varnish, will make the wood of a good yellow colour.

Another method.

Reduce four pounds of the roots of barbery, by sawing into dust, which put into a copper or brass pan, add four ounces of tumeric, to which put four gallons of water, then put in as many holly veneers as the liquor will cover; boil them together for three hours, often turning them. When cool, add two ounces of aqua-fortis, and the dye will strike through much sooner.

Bright green.—Proceed as before to produce a yellow; but instead of aqua-fortis, add as much of the vitriolated indigo as will produce the desired colour.

Another method.—To three pints of the strongest vinegar, add four ounces of the best verdigris, ground fine, half an ounce of sap-green, and half an ounce of indigo. Proceed in straining as before.

Bright red.—To two pounds of genuine Brazil dust, add 4 gallons of water, put in as many veneers as the liquor will well cover, boil them for three hours, and let them cool; then add two ounces of aqua-fortis, and keep it luke-warm until it has struck through.

Purple.—To two ounces of chip logwood, and half a pound of Brazil-dust, add four gallons of water. Put in the veneers, and boil them well; then add six ounces of pearl-ash and two ounces of alum: let them boil two or three hours every day, till the colour has struck through.

Fine blue.—Into a pound of oil of vitriol in a glass bottle, put four ounces of indigo, and proceed as before directed.

To stain paper or parchment.—Yellow.

Paper may be stained a beautiful yellow by the tincture of turmeric formed by infusing an ounce or more of the root, powdered, in a pint of spirit of wine. This may be made to give any tint of yellow, from the lightest straw to the full colour, called French yellow, and will be equal in brightness even to the best dyed silks. If yellow be wanted of a warmer or redder cast, annatto, or dragon's blood, must be added. The best manner of using these, and the following tinctures, is to spread them even on the paper, or parchment by means of a broad brush, in the manner of varnishing.

Crimson.—A very fine crimson stain may be given to paper by a tincture of the Indian Lake, which may be made by infusing the lake some days in spirit of wine, and then pouring off the

tincture from the dregs. It may be stained red by red ink. It may also be stained of a scarlet hue by the tincture of dragon's blood in spirit of wine, but this will not be bright.

Green.—Paper or parchment may be stained green, by the solution of verdigris in vinegar, or by the crystals of verdigris dissolved in water.

Orange.—Stain the paper or parchment first of a full yellow, by means of the tincture of tumeric; then brush it over with a solution of fixed alkaline salt, made by dissolving half an ounce of pearl-ashes, or salt of tartar, in a quart of water, and filtering the solution.

Purple.—Paper or parchment may be stained purple, by archil, or by the tincture of logwood.

The juice of ripe privet berries expressed will likewise give a purple dye.

To marble the edges of books or paper.

Dissolve four ounces of gum arabic in two quarts of clear water: then provide several colours mixed with water in pots or shells, and with pencils peculiar to each colour, sprinkle them by way of intermixture upon the gum-water, which must be put into a trough, on some broad vessel; then with a stick curl them or draw them out in streaks, to as much variety as required.

Having done this, hold the book or books close together, and only dip the edges in, on the top of the water and colours very lightly; which done, take them off, and the plain impression of the colours in mixture will be upon the leaves; doing as well

the ends, as the front, of the book the same manner.

To marble the covers of books.

This is performed by forming clouds with aqua fortis, or spirit of vitriol, mixed with ink, and afterwards glazing the covers.

To colour vellum green.

Take half a pint of the best white wine vinegar, an ounce of verdigris, and half an ounce of sap green; dissolve them in the vinegar for a few days, having been heated by the fire. Shake the bottle frequently before it is used.

Wash the vellum over with weak potash water, and when dry, colour it with the green three or four times, till it has a good colour: when dry, wash it over with thin paste water, to give the vellum a gloss.

To black the edges of paper.

Mix black lead with ink, and when the paper is cut, colour it thinly over with black ink, with a fine piece of cloth; rub on the black-lead, covering every part; take the dog's-tooth, and burnish the edge till it becomes well polished.

When the edge of the paper, after cutting, appears rather rough, scrape it over with a piece of glass or an iron scraper, with a flat edge.

To sprinkle the edges of books, &c.

The brushes used for book-edges, must be made of Russia hog's bristles, of good thickness, tied round with cord, glued at the thick end, and half covered with a piece of leather: when dry, tye the brush again with a waxed cord, within half an inch

of the soft part, and cut it very smooth and even. Brushes made after this manner are preferable to those with a handle.

Prepare the colour in a cup; dip in the brush till it is charged, and then press it out till it will drop no longer. The book must be screwed tight in the cutting press: hold the brush in the left hand, and, with a folding stick in the right, rub it over the brush, which will cause the colour to sprinkle finely on the edges. The brush must be moved up and down over the edge, as you sprinkle, to have it regular on every part. After the sprinkling is done, the brushes should be carefully washed in water, particularly after sprinkling blue, which will otherwise soon destroy the brush.

To dye or stain horn tortoise-shell colour.

The horn to be dyed must be first pressed into proper plates, scales, or other flat form, and the following mixture prepared: Take of quick-lime two parts, and litharge one part, temper them together to the consistence of a soft paste, with soap ley. Put this paste over all the parts of the horn, except such as are proper to be left transparent, in order to give it a near resemblance to the tortoise-shell. The horn must remain in this manner, covered with the paste, till it is thoroughly dry; when, the paste being brushed off, the horn will be found partly opaque and partly transparent, in the manner of tortoise-shell, and when put over a foil of the kind of lattern, called orsedue, will be scarce distinguishable from it. It requires some degree of fancy and judgment to dispose of the paste in such a manner as to form a variety of transparent parts, of different magnitudes; and figures

to look like the effect of nature; and it will be an improvement to add semi-transparent parts, which may be done by mixing whiting with some of the paste, to weaken its operation in particular places, by which spots of a reddish-brown will be produced, which, if properly interspersed, especially on the edges of the dark parts, will greatly increase the beauty of the work, and its similitude to real tortoise-shell.

Another method.

Take an equal quantity of quick-lime and red lead, and mix it up with strong soap lees. Lay it on the horn with a small brush, like the mottle in tortoise-shell. When dry, repeat the same two or three times.

To dye horns of different colours.

Black is performed by steeping brass in aqua fortis till it is turned green: with this the horn is to be washed once or twice, and then put into a warmed decoction of logwood and water.

Green is begun by boiling it, &c. in alum-water, then with verdigris, ammoniac, and white wine vinegar, keeping it hot therein till sufficiently green.

Red is begun by boiling it in alum water, then with verdigris, ammoniac, and finished by decoction in a liquor compounded of quick-lime steeped in rain water, strained, and to every pint an ounce of Brazil wood added. In this decoction the horns are to be boiled till sufficiently red.

Horns receive a deep black stain from solution of silver. It ought to be diluted to such a degree as not sensibly to corrode the subject, and applied two or three times if necessary, at considerable

intervals, the matter being exposed as much as possible to the sun, to hasten the appearance and deepening of the colour.

To imitate King or Botany-bay wood.

Take French berries half a pound, and boil them in two quarts of water, till you have a deep yellow, and with it boiling hot, give two or three coats to your work; let it be nearly dry, then, with the black stain form the grain with your brush: to be used hot.

N. B. You may, for variety, after giving it two or three coats of yellow, give one of strong logwood liquor which will heighten the colour, and then use the black stain as directed.

A common red for bedsteads and common chairs.

Archil, as sold at the shops, will produce a very good stain of itself when used cold; but if, after one or two coats being applied and suffered to get almost dry, we brush it over with a hot solution of pearlash in water, it will improve the colour.

To imitate rose-wood.

Take half a pound of logwood, boil it with three pints of water till it is of a very dark red, to which add about half an ounce of salt of tartar, and when boiling hot stain your wood with two or three coats, taking care that it is nearly dry between each; then with a stiff flat brush, such as is used by the painters for graining, form streaks with the black stain above named, which if carefully executed, will be very near the appearance of dark rose wood.

Another Method.

Stain your wood all over with the black stain, and when dry, with a brush as above, dipped in the brightening liquid, form red veins in imitation of the grain of rose-wood, which will produce, when well managed, a beautiful effect.

Note—A handy brush for the purpose, will be made by taking a flat brush such as is used for varnishing, and cutting the sharp points off the hairs, and making the edge irregular, by cutting out a few hairs here and there, you will have a tool which, without any trouble, will imitate the grain with great accuracy.

To varnish a piece of Furniture.

First, observe the work to be clean; then see if any knots or blemishes require filling up, which must be done with cement of the same colour; have your varnish in an earthen pot, with a piece of wire diametrically across the top, slackened downwards, to stroke the brush against; then see that your brush is clean, and free from loose hairs, dip your brush in the varnish, stroking it across the wire, and give the work a thin and regular coat; soon after that another, and another, always taking care not to pass the brush twice in the same place; let it stand to dry in a moderately warm place, that the varnish may not chill.

When you have given your work about six or seven coats, let it get quite hard, (which you will prove by pressing your knuckles on it, if it leaves a mark it is not hard enough;) then with the three first fingers of your hand, rub the varnish till it chafes, and proceed over that part of the work you mean to polish, in order to take out all the

streaks, or partial lumps made by the brush; give it then another coat, and let it stand a day or two to harden.

Note—The best vessel for holding your varnish is commonly sold at colour-shops, called a varnish pan; it is constructed of tin with a false bottom; the interval between the two bottoms is filled with sand, which being heated over the fire, keeps the varnish fluid and flows more readily from the brush; there is a tin handle to it, and the false bottom comes sloping from one end to the other, which causes the varnish to run to one end, and with a wire across in the same manner as recommended in the above directions.

To keep your brushes in order.

The brushes used for varnishing are either flat in tin, or round tied firm to the handle, and either made of camel's hair or very fine bristles; in the use of which it is necessary to be very careful in cleaning them after being used, for if laid by with the varnish in them they are soon spoiled; therefore [after using them wash them well in spirits of wine or turpentine, according to the nature of your varnish; after which you may wash them out with hot water and soap and they will be as good as new, and last a great while with care; and the spirits that are used for cleaning, may be used to mix with varnish for the more common purposes, or the brushes may be cleansed merely with boiling water and strong yellow soap.

To make the best white hard Varnish.

Rectified spirits of wine, two gallons: gum sandrach, five pounds; gum mastic, one pound; gum

anime, four ounces; put these in a clean can, or bottle to dissolve, in a warm place, frequently shaking it, if (when the gum is dissolved) you strain it through a lawn sieve, it is fit for use.

*To make Mastic Varnish proper for varnishing
Pictures or Drawings.*

To every quart of spirits of turpentine put one pound and a quarter of the cleanest gum mastic, set it in a sandbath till it is all dissolved, then strain it through a fine sieve, and it is ready for use; if too thick, you may thin it with spirits of turpentine.

To make Turpentine Varnish.

To one gallon of spirits of turpentine add five pounds of clear rosin pounded; put it in a tin can, on a stove and let it boil for half an hour; when the rosin is all dissolved; let it cool, and it is fit for use.

To make a Varnish for Violins, &c.

Take half a gallon of rectified spirits of wine, to which put six ounces of gum mastic, and half a pint of turpentine varnish; put the above in a tin can, keep it in a very warm place, frequently shaking it, until it is dissolved; strain it and keep it for use. Should you find it harder than you wish, you may add a little more turpentine varnish.

*To Varnish Harps and Dulcimers in the Indian
manner.*

Prepare the work with size and red ochre; then take ochre, burnt umber, and red-lead, well ground, and mix up a dark brown color in turpentine var-

nish, adding so much spirits of turpentine that you may just be able to work it, pass over your work fair and even; and while it is yet wet, take a muslin sieve, and sift as much Dutch metal, (bronze,) upon it as you think requisite to produce the effect; after which varnish and polish it.

To varnish Drawings, or any kind of Paper or Card-work.

Take some clear parchment cuttings, boil them in water in a clean glazed pipkin, till they produce a very clear size, strain it, and keep it for use.

Give your work two coats of the above size, passing quickly over the work, not to disturb the colors, proceed as before directed with your varnish.

Another Method still better.

Take one ounce of the best isinglass, dissolve it in about a pint of water by simmering it over the fire; strain it through fine muslin, and keep it for use.

Try the size on a piece of paper, (heat it to a moderate heat,) and if it glistens it is too thick; then add more water, if it soaks into the paper it is too thin; add or diminish the isinglass till it merely dulls the surface; then take your drawing, and give it two or three coats, being careful (particularly in the first coat) to bear very lightly on the brush, (which should be a flat tin camel's hair,) and plenty of size to flow freely from it, otherwise you may damage the drawing.

Then take the best mastic varnish and give it at least three coats, and the effect will answer your most sanguine wishes.

Note.—This is the method used by many emi-

ment artists and is found superior to any that has been tried.

Amber Varnish.

Take amber eight ounces, in powder, and two of gum lac: melt the amber by means of the heat, by means of a glazed pipkin, with half a pint of the best spirits of turpentine; and when melted add the gum lac, place it on the fire again, and keep stirring it with a piece of wood till it is all dissolved, then add one ounce of the clearest cold-drawn linseed oil; stir it well together, and strain it for use

Oil Varnish.

Take any quantity of the best linseed oil, let it boil for an hour, then to every pound of oil add a quarter of a pound of the clearest rosin in powder, stir it well till dissolved; then add for every pound of oil used, one ounce of spirits of turpentine, strain it and bottle for use.

Note.—This is a cheap and good varnish for sash frames, or any work where economy is required; it has besides the property of bearing hot water without being damaged, and is not subject to crack or scratch.

Copal Varnish.

Take spirits of wine one quart, gum copal one ounce, and shell lac half an ounce; reduce the gums to powder, put the spirits in a jar or bottle, add the gums, place the whole in a warm place, with the cork lightly in the bottle; shake it occasionally, and when the gums are quite dissolved, strain and bottle for use.

To tinge bone and ivory red.

Boil shavings of scarlet cloth in water. When it begins to boil, throw in a quarter of a pound of ashes made from the dregs of wine, which will extract the colour; then throw in a little roche alum to clear it, and pass the water through a linen cloth. Steep the ivory or bone in aqua-fortis, and put into the water. If it is necessary to leave white spots, cover the place destined for them with wax.

Black.—Take a double handful of lime, and slack it by sprinkling it with water: stir it up together, let it settle ten minutes, and pour the water into a pan. Then take the ivory, &c. and steep it in the lime water twenty-four hours, after which, boil it in strong alum water one hour, and dry it in the air.

Another method.

Steep the bone or ivory during five or six days, in water of galls with ashes made with dried dregs of wine and arsenic; then give it two or three layers of the same black, with which plumbtree is blackened in order to imitate ebony.

Or dissolve silver in aqua-fortis, and put into it a little rose water. Rub the ivory with this and allow it to dry in the sun.

Green—This colour is imparted to ivory or bone by a solution of copper or verdigris in aqua-fortis, or by grinding together two parts of verdigris and one of sal-ammoniac.

Purple.—Take four ounces of aqua-regia, and one of sal-ammoniac.

Yellow.—Ivory, bone, horn, &c. may be stained yellow, by previously boiling them in a solution of one pound of alum, in two quarts of water, then immersing them for half an hour in a liquor, pre-

pared by boiling half a pound of tumeric in a gallon of water, until it be reduced to hree quarts, and afterwards plunging the coloured substance into alum water.

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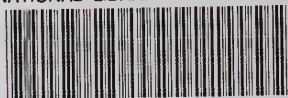






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